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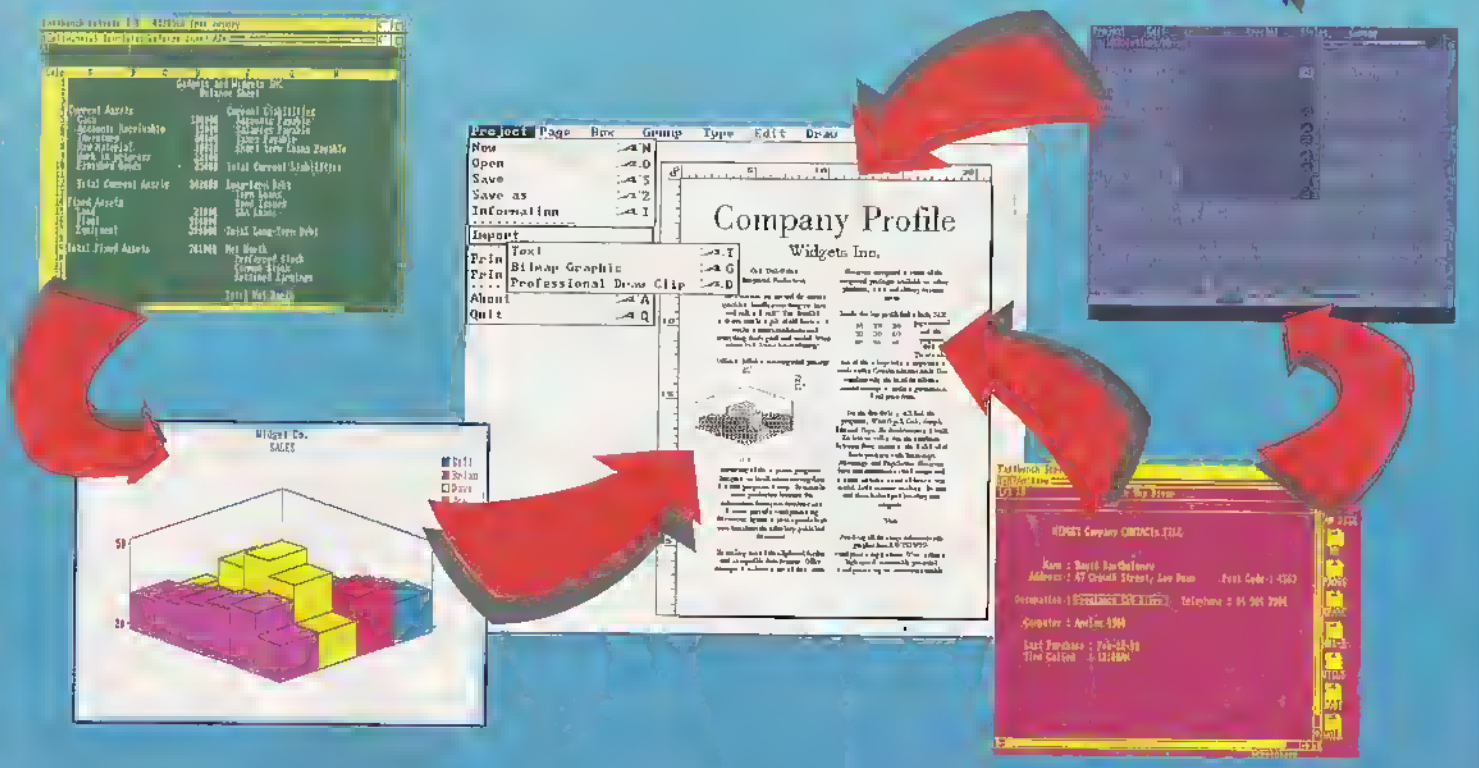

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Editorial

An advertisement in an April 1983 *Your Computer* magazine reads in part: "16K Expander - $110, 3K Expander - $45, Atari 800 48K Computer - $1225". Yes, prices sure have changed. Why, you could probably find a 512K RAM expander for the Amiga 500 for not much more than the cost of a 16K model back in 1983. And who would think of paying $1200 for a 48K computer?

Of course, computer memory is one of the things that has dropped dramatically. However, even software has fallen in price. Whereas Amiga games used to hover around the $89-$129 dollar price, now you can pick up a good title for between $29 and $49. Now you would think the old argument about software pricing would be well and truly over. But no, we still get letters from people telling us programs should be as cheap as records, quoting the price of 3.5 inch disks at around a dollar, and where does all the profit go?

Well, I think it's high time we gave the software issue a rest. Commercial programs aren't about to get any cheaper and they don't really need to be. Shareware and public domain programs more than take up where the commercial range leaves off. The software market now offers a very complete price range and a huge array of products to choose from. Check out the story on Shareware in this issue.

In the crystal ball gazing department, 1991 looks like one of those uneasy years. The Amiga is selling well, but with Apple preparing to do battle with their new range (Classic, SI, LC) Commodore may be in for some stormy weather.

New software releases for both machine ranges are still bubbling forth. Rumours of the big boys (Ashton Tate and Lotus) moving into the Amiga software market are still circulating, but as yet remain purely as rumors. On the multimedia front things seem to be moving a little sluggishly, but this year could hold some surprises as 24-bit graphics displays and Newtek's Video Toaster continue to enjoy greater success. The Software Bakery are even considering a Music Blender to top it all off.

The crazy thing about all the hype about multimedia is that it is such a small market. When it comes to the Amiga at home, in the mass market, we're talking entertainment and wordprocessing, a bit of graphics and maybe some other applications in the music, animation or education areas. Wouldn't it be nice to see the marketing people return to the good old days of selling the machine on the basis of what most people will be using it for. Filling ads with animations one could only create on a high powered top end machine has no relevance for the average consumer who wants to write letters on something easy to use, file a few simple lists, play a lot of games, help their children's education, and generally feel good about the whole deal.

Andrew Farrell

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RAM RUMBLES

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For the budget-minded an equally robust model which is a tad cheaper has also been released. It's called the StarFire and features a similar tough design. We've road tested it on numerous great games and found it's almost as good as big brother.

For more information call Multicoin on (075) 375 452 or speak to your local Commodore dealer about the one we recommend!

Cleon power for sofe computing

Power spikes and surges can play havok with home computers, especially if you live near an Industrial area or in a lightning prone suburb. One answer is to spend a little money on a protection board. Instead of spending $20 on a four outlet Kambrook, $59.95 will buy you a six outlet board with voltage surge and spike protection as well as a noise rejection filter. The unit helps ensure clean reliable power that won't send you spinning into a Guru at the slightest hiccup. A very worthwhile investment!

For more information call A.H. Kirk Trading on (02) 427 1861 or fax (02) 418. 7721.

Medio spottings ond Commodores ot work

Although the flood of letters has been reduced to a trickle, Commodores are still out there doing their thing. Our reader reporters roaming the air waves sighted these spots containing Commodore computers.

On the ABC an educational story called The Bamboo Brush was screened - a Canadian production about a Chinese boy living in Canberra. In one classroom scene every desk contained a computer - the old trusty Commodore PET! We wonder if they've upgraded to something else since the film was shot. Anyhow, thanks to Stuart Elfett for this one.

"Get Smart Again", the video, the one where Max and 99 get married, has a glimpse of the Amiga 1000 during the opening scenes. A clerk from Control is requested to look up some information on a former agent. Behold, the 1000 doing its thing with what our reporter alledges to be *Superbase*. A screen title along the lines of "Top Secret - Agent Information" appears. Next we see the personal details and a photograph of Maxwell Smart. We think it's *Superbase* too - thanks for the information, Bevan Harris of Kalgoorlie.

Let's drum up some locol press!

Wouldn't it be nice to see some more local press about the Amiga? Now we're not talking about cake shops in Alice Spring digitising icing patterns, but real information on what the machines are up to! Well, the *Sydney Morning Herald* has My Friend the Amiga running again, now being written by Tom Ellard ("Severed Heads" music whiz) - all the best, Tom!

However, many other magazines and newspapers seem to be ignoring the giant home computer market. In America *Amiga World* magazine started a campaign of letter-writing to help get some of these editors to look at the Amiga and at home computing. The letters were written to all those publications which aren't giving the Amiga a fair go.

How about we start something like that down here in Australia? There are lots of magazines that hardly mention Amiga even when writing about graphics, animation or multimedia. A little mention even on the subject of desktop publishing or word-processing would be great too! Why bother? Well, if more

continued on p. 6

Update

Happy New Year! We should like to take this opportunity to wish the avid readers of this column and their families a very very happy and successful 1991 and let's begin the year with really **BIG BIG NEWS!!!** Amiga Cricket - "AMIGA CRICKET" is now available. This brilliant game, written here in Australia , we are proud to say, is now available at your local Commodore dealer. This is one game that you will play forever (I am looking forward to my retirement so I can spend time playing Cricket, even in Winter!).

Other exciting new releases are the Power Pack, which is a games compilation containing LOMBARD RALLY, XENON 2, BLOODWYCHE and TV SPORTS - undoubtedly the best value package of its kind ever. Also newly available for the Amiga are the following games:

WILDLIFE: Top notch photographer is sent on worldwide assignment to film rare creatures.

ASTATE: Find the Statue and the source of its power - a unique animated adventure with brilliant graphics.

OVER THE NET: Beach volley ball - great frantic tournaments on some of the world's best beaches.

ROGUE TROOPER: The war on Nu-Earth continues - one of the genetically engineered soldiers turns rogue and tries to track down the traitor General.

DAILY DOUBLE HORSE RACING: Hundreds of horse/jockey combinations; fast or slow; replays or finishes: real time animation; multi or single player, 8 different bets.

ATOMIX: A great mixture of education and entertainment in this addictive puzzle game - you slide molecules around to form required atoms.

And don't forget about our great economy packs @ $16.95 - SPY v SPY; BOULDERDASH CONSTRUCTION KIT: DRAGONSCAPE, ecetera - be WICKED and insist on these.

Educationally speaking, please see our adverts on pages 25 and 51 for our new great additions to the Pactronics range on AMIGA.

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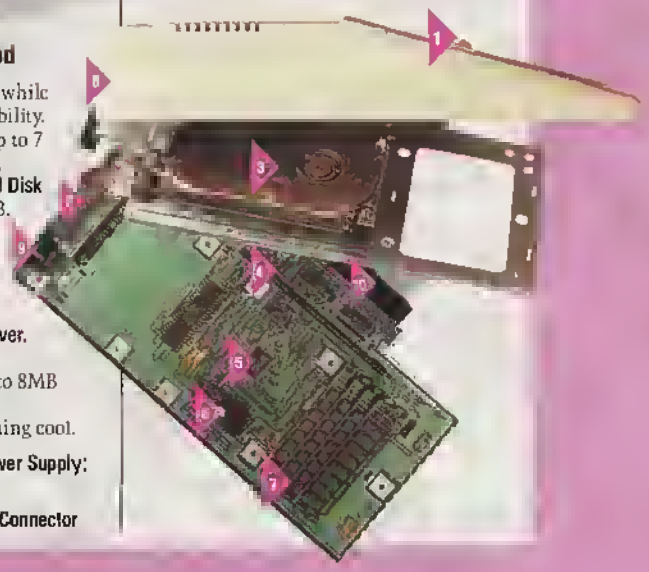

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people read more about the Amiga and take it more seriously, more people will take the whole thing seriously and we're more likely to see more software and more support. So if you want more, write in to a publication, to the editor, and let him know that you'd like to see more stories about the Amiga. Be specific if you can - mention an instance when they really left the Amiga out of a story where it should have been mentioned. If we all pull together we can help improve our own turf!

Apology

Last month we published comments from several industry identities on what they would love to buy for themselves. In a moment of serious memory lapse, Mary-Louise Parkinson somehow became Mary-Louise Taylor. We apologise for this error.

C64 news

Turba Accelerator makes yaur C64 as fast os o Turba XT!

Fancy a little more speed out of GEOS? BASIC programs run too slow? How would you like a four times speed increase?

HPD are now shipping the Turbo Master CPU, a 4.09 MHz Accelerator for the C64 or C128 in C64 mode. The unit plugs into your expansion port in a sturdy steel case. On board there are four dip switches and a small reset button. The switches allow you to manually select the processor speed, enable software control of the same switch, choose between two Kernel ROMs or completely disable the cartridge.

All this ensures compatibility with a wide range of hardware and software. Even GEOS will enjoy increased screen refresh speeds. Disk loading and saving is improved four to six times and you can even add an optional JiffyDOS ROM designed especially to work with the accelerator.

Turbo Master works with GEORAM for the ultimate C64 - however it is recommended you get hold of a heavy duty power supply! Watch for a full review next issue.

For further information contact HPD on (08) 252 3300. Recommended retail price is $.....

Win $1000!

The first person to solve Gary McCleary's new C64 adventure The Space Explorer will win a reward of $1000. This adventure is all graphics, new for the C64, and as Gary says, "has a real pot of gold at the end of its rainbow".

So if you're looking for something to do in the holidays, see the advertisement elsewhere in this issue to enter.

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Notepad

Low-cost, high speed SCSI interface

Maxdrive Systems are shipping the new AdSCSI 2000 series SCSI controller for the Amiga. According to a speed comparison provided by the company, this new controller is significantly faster than alternatives. At $299 it is also significantly cheaper. With a 42Mb Quantum Hard Disk the total price hits $950 - still great value considering the speed and quality of such a system. The unit will auto-boot from a FFS partition, and supports full CBM Rigid Disk Block standards. Throughput doubles when used in a 68030 machine with 32-bit RAM. The entire range of ICD products are now available through Maxdrive Systems. For more information call (076) 302012.

Entry level word processor

QuickWrite is a new entry level word processor for the Amiga. It provides high performance and advanced features in a program that runs on minimal Amiga systems. Features include a fast "what you see is what you get" display, advanced mail merge facility, 50,000 word spelling checker, macros, an AREXX port, and automatically updated date and time markers.

QuickWrite also provides complete control over printing, including support for custom paper sizes, and the ability to print in Pica, Elite, or Condensed pitch.

QuickWrite is able to export and import text files in the format recognized by Professional Page, *allowing QuickWrite to be used as a front-end for composing articles that will be placed in a* Professional Page *document.*

Adding to QuickWrite's *usefulness is its file compatibility with* ProWrite, *one of the leading Amiga word processors. Documents can be transferred from* QuickWrite *to* ProWrite *without any loss of content or formatting. Since* QuickWrite *is file compatible with* ProWrite *you will never be forced to retype or reformat your documents should you later discover that you need the capabilities of a high end word processor. All of the documents created with* QuickWrite *will be immediately recognized by* ProWrite. *File compatibility also means that any program that can import* ProWrite *files will also handle* QuickWrite *files.*

Suggested retail price is A$99.00. It will require 512K of memory and Kickstart 1.2 or later. For information call Computermate on (02) 457 8388.

Scene Generotor

This product by Natural Graphics, enables the user to create realistic fractal scenery on the Amiga, including clouds, snow, greenery and water in IFF format. The user has complete colour and lighting control. Scene Generator supports six screen resolutions including overscan. Four modes of rendering include 10 second preview. It requires 1MB of RAM.

Distributed in Australia by M.A.S.T., 19-21 Buckland St, Broadway 2007. Phone: (02) 281-7411.

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Over 100 pre-designed forms are included to customise.

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New structured drowing progrom

Graphic Designer, a new structured drawing program for the Amiga, promises to bring the powerful capabilities of structured drawing to a much wider audience. Graphic Designer is for people who need to create detailed and precise drawings, from the simple to the complex, but who don't have time to grapple with slow and difficult to use progroms. Graphic Designer is designed to be fast, intuitive and affordable.

Structured (or object oriented) drawing programs differ from normal paint type programs in their method of handling graphic elements. Rather than treating a graphic element as a collection of screen pixels, structured drawing programs treat them as independent objects that can be arbitrarily modified and arranged. This gives greater control over pre-

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aise positioning and appearance, and makes it much easier to later modify the drawing.

Graphic Designer overcomes the limitations of some packages' complexity by keeping the design simple using a responsive interface and a feature set designed with the non-professional user in mind. Most notable of the many features of Graphic Designer are "smoothable" curves using a Bezier smoothing algorithm, multiple drawing layers, a very flexible text handling system permitting the use of any Amiga font, size, and style, and an unlimited number of user definable multi-colour patterns. Graphic Designer also includes an AREXX port with a complete macro language, which makes it possible to automate the creation of drawings, and to interact with other AREXX compatible programs.

The program also provides comprehensive control over printing, providing options for reduction and enlargement, sideways printing, and adjustable print density. If a drawing is larger than a single page in size, Graphic Designer will automatically divide it into several seperate pages and print them in sequence. These can then be assembled into the complete drawing. Drawings of over 64 square feet in size can be created in this manner.

Graphic Designer has a suggested retail price of $125.00 (U.S.). It will require 512K of memory and Kickstart 1.2 or later. For information call Computermate on (02) 457 8388.

Mediashow

Coming soon from Gold Disk - whether you are creating business presentations, rock 'n roll videos, or just having fun, MediaShow will allow you to harness your Amiga's animation graphics and sound power. Think of MediaShow as a multi-media sequencer that allows you to combine and sequence animations, graphics, music, and sound effects into long running, dynamic movies and presentations.

Using its built-in video titler, you can overlay text on top of your movies with special effects such as multi-coloured extrusions, shadows and outlines. And you can easily add sparkle to your movies with the built-in wipes, fades, transitions, and dissolves - giving your movies that professional "Hollywood" look.

With the Amiga's multitasking capabilities and Gold Disk's patented technology, MediaShow automatically loads upcoming segments of your movie from disk while the movie is playing. This allows for long running, continuous playing animations - no more waiting for disk loads. All this power is available at the click of a mouse. MediaShow's unique timeline user interface makes creating movies a snap - no complex codes to remember, no fancy programming required. MediaShow supports files from most paint programs, 3D rendering and animation programs, music programs, and sound digitizers/editors. No additional hardware is required. At only $99.95 (U.S.), MediaShow should be available in the future from Dataflow.

(Ed - Sounds like a cut down version of Show Maker... hey, we still haven't seen that yet either!)

Hyperbook - the free form application generator

Move over CanDo? HyperBook from Gold Disk is the a tool for creating and managing information and presentations. Using a point and click interface you can create simple or complex personal, business, and education applications. Personalized appointment calenders, address books, interactive greeting cards, visual multimedia inventory lists, business presentations with interactive charts and graphs, custom teaching "books", and free form interactive educational presentations.

A picture may be worth a thousand words, but what if you could click on a picture and see those words. Need to understand the chart? Click on each wedge and see the data behind it. Want children to understand and enjoy learning about the solar system? Make each planet into a button that launches other pictures and detailed descriptions. This is just the beginning of what you can create quickly and easily with HyperBook.

HyperBooks are made up of pages (screens) that combine many different kinds of information and graphics in a free form manner so they are just how you want them. Anything on the page can become a button to launch you in new directions. And you build all this on the page as you use it, with simple point and click controls that mean you'll never have to type in a command. And using its extensive built-in AREXX support, HyperBook becomes a sophisticated authoriting system, encompassing all aspects of the Amiga. HyperBook can stort helping you today and grow with you tomorrow. RRP $99.95 (U.S.)... this one sounds like what we've been waiting for. Let's hope it's a bit easier than CanDo to set up!

GPterm update

GPTerm has jumped up to version 4.5. This update to the popular Australia communications package for ASCII and Videotext type BBS's is available to all registered users. To obtain an upgrade, registered users must return to GP Software, 21 Aloomba Rood, Ashgrove 4060 their old master disk together with cheque or money order for $32.50 (p&p included).

Some of the significant changes in Version 4.5 include :

•Fully buffered file I/O - more efficient file transfers resulting in better multitasking.

•Automatic detection and

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initiation of ZModem downloads.

•Full support for Telecom's Discovery 80 service with automatic support for the Discover 40/80 "Dynamic mode switching" concept.

•Improved response from the file requester which remembers the file poths after disk changes.

•Addition of Amiga Shell-like buffered and non-buffered split window chat modes.

•Now two IBM emulations - IBM1 8 colours, IBM2 16 colours.

•Improved compotibility with IBM font graphics supporting the lower characters (< $1F).

•Improved VT100 emulation with automatic support for VT100 graphics character set and both 80 and 132 column fonts.

•Better support for multiple dialling of services - "NEXT" gadget added to dial window.

•User definoble borders, titles or screen depth gadgets. Interlace mode available in Amiga emulation.

•Full support for multiple serial devices and alternate serial.device drivers. All Amiga handshaking options are now available.

•More efficient overlay version for 512K users.

A2000 & NEC Multisync II monitor glitch

If you have an A2000 with which you wont to use both an NEC Multisync II & and the Enhanced Chip Set (ECS), there is some kind of problem which has been solved by Commodore with Part No. 390682 costing around $15. It plugs in between your monitor and computer. Works fine with Workbench 2.0 and Amax.

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Letters to the Editor

CLI

Congratulations on the CLI Tutorials by Andrew Leniart. The clearest, most complete explanation I've read in a couple of years of searching after the truth. More please.

G. A. Barnett
MacQuarie ACT

Printing

I now buy this magazine as it is Australian and out of all the magazines it is the best for the price. One suggestion is that there be more programming. Maybe repeat some articles (machine code tutorial, picking a printer) or do some new ones on how to write adventure games leading up to shoot-em-ups. Try putting games, wordprocessors, utilities, to type in every month (include a checksum so you know when your wrong).

I have the new C64, a DM-6403c turbo datacorder, a 1541 II disk drive, 1351 mouse and the MCS810 (Okimate 20) printer.

When I bought my MCS810 I bought it for the colour printing, in the Pro Pak+. I went through the manual to find out how to colour print but all I found was how to print the colour demo. The manual said colour programs were on the disk provided but they weren't. I went back to the shop and asked for the disk, and was told they never received it. How do I get this disk and does anyone know of any other colour printing programs, (*Printshop* etc.).

I also have *Advanced Art Studio* which doesn't even print in black and white. Do you or anyone else know how to modify the program so it will print, preferably in colour.

Keep up the good work, you've got a great magazine.

Glenn Jones
Buderim QLD 4556

Ed: *Have you tried GEOS? Anyone else had any joy on this one?*

Upgrading to an A2000

I am at the moment seriously considering upgrading from my C64 to either an IBM compatible or an Amiga. However, before I make the decision, I must know a few things which I hope you will be able to answer for me:

a) Does the Amiga 2000 come IBM compatible?

b) What is the average price of the IBM Emulation Board for the Amiga 2000?

c) When the Amiga 2000 emulates an IBM, around what speed does it clock in at, and what sort of graphics quality is it (EGA, CGA, VGA etc)?

d) When the Amiga 2000 emulates an IBM does it act like a 286 or 386?

e) Does Commodore sell any 386 IBM clones, and if they do, what are their prices, their clock speeds and model names?

f) (most importantly) Which computer do you recommend, an Amiga 2000 that can emulate an IBM or an IBM compatible?

g) For the two machines, what are the best brands of PASCAL and C available?

My use of the system will be for word processing, music, graphics and primarily programming. I hope that you will be able to help me decide upon which computer is the best buy.

Preston Guise
Parkes, NSW

Ed: *IBM compatibility on the Amiga is a classic "me too" add on for around $1,400. The Bridgeboard is the product you're after - it is available as either an XT (old model second hand), or AT/286 (still available). Both are CGA and relatively slow, with speeds that clock in at the low end of the PC-clone market. Commodore do sell PC clones too, which are as good as most. But for your purposes forget the PC and go all out Amiga.*

C64 Basic limits

I am working on a very large BASIC program with many variables, and for some time I am continually getting out of memory errors. I've done exhaustive checks for faults within the program and everything is ok. The problem is insufficient RAM memory. Reading the June issue of ACAR and *Letters to the Editor* section, one chap in a letter published mentions you had written an article which highlighted the 1764 RAM expansion unit. I've known of the unit for sometime, but never pursued or thought I would have the out of memory problem until now.

Could you advise me where I could get one of these units in Australia, or USA or UK.

Another thing which concerned me with the 1764 was the confusion on the power supply. I was told it would not work over here. I have one of the early model C64's. Yesterday I contacted some software houses via phone (no luck) but one said they (Briwall ACT) had been using the 1750 512K RAM expansion model for the C128 computer without any troubles. I wonder if you have any knowledge of this use. In the March 1987 Compute Gazette, Tim Butterfield, in a article entitled *RAM Expansion for the C128*, sums up the article by saying as follows; "By the way, even though the connector looks compatible, don't try to plug either of the models 1700 or 1750 into a Commodore 64. The power supply isn't able to handle the load, and you're (likely) to cause electrical damage to the chips on board".

I would greatly appreciate your advice.

K. Mundy, TAS

Ed: *Yes, power can be a problem, especially on earlier C64's. You can buy a beefier power supply which will solve this problem. Adding extra RAM using the GEORAM expander might be the answer - but making use of extra RAM is fairly tricky from BASIC. A C128 might also hold the key, however I would recommend you take a close look at your program.*

Are you using integer variables where possible? Could you make better use of variables? Could you combine some program lines onto one line? There are many ways to crunch down the space taken up by variables. What about using POKES to store arrays of low values in $C000, 49152 memory?

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by A. Farrell

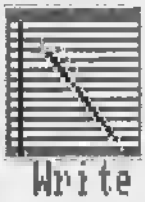
"New versions ore around the corner, quick, let's bundle everything we have ond sell, sell, sell!" Yes, bundled softwore con be o pile of old boots or it con be o smort combinotion of everything thot's good ond useful. Whot about Gold Disk's lotest offering?

Office is billed as an integrated package consisting of five separate programs. Integration should mean moving data between programs is easy. You can be more productive because the information from your database can become part of a wordprocessing document, figures in your spreadsheet or a bar chart for a desktop published document.

By making use of the clipboard facility and compatible data formats, *Office* manages to achieve some of these aims, although it is a tad clumsy in some areas.

Inside the box you'll find a hefty 348 page manual and five program disks, on which you'll find five programs; *Write/Spell, Calc, Graph, File* and *Page*.

No doubt seasoned Gold Disk users will notice the similarity between these names or the look/feel of these products with *Transcript, Advantage* and *PageSetter*. However, there are numerous extra features and in some instances some of these are very useful. Let's examine each one by one and then look at just how they can integrate.



Write

Avoiding all the snags inherent with graphic based WYSIWYG wordprocessing systems, *Write* offers a high speed, reasonably powerful wordprocessing environment suitable for either large documents or short notes. The program is very popular amongst professional writers for its easy editing capabilities, good search and replace options and ability to have several documents open at once. *Write* is in fact a new name for *Transcript*, a product which has been around for some time. There appear to be no obvious differences, although the file is about one kilobyte larger.

For those unfamiliar with the product, *Write* offers few of the modern bells and whistles many Amiga users are familiar with when it comes to wordprocessing. Formatting of text is handled by embedded codes which do not affect the text layout until it is printed or previewed to screen. This may sound archaic, but in practice is quite functional as many *Easy Script* users from Commodore 64 days will attest. It doesn't slow down editing, the more important process.

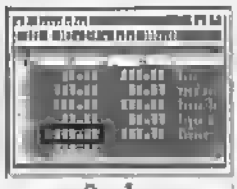
Furthermore, *Write* offers the ability to work very closely with *PageSetter, Page* or *Professional Page*. Formatting codes from these desktop publishing programs may be included in your document. A menu option allows you to hide these during editing, or reveal them for alteration.

If you have one of the aforementioned desktop publishing programs running, you can export to *Write* on the fly using a single key press. The formatting codes remain intact. The text can then be edited and returned to the program which sent it, once again with all layout codes intact. A very powerful, sophisticated use of multitasking which makes the job of editing text already in page layout an absolute dream.

Although short on fancy looks, *Write* still has plenty of power. It can automatically generate an index to a document from tagged key words. Mail merges can be performed and there is a powerful Macro function. For writers, there's also a vital word count option. The spelling checker works reasonably well, although the dictionary is very American. You can create your own user dictionary, but this is not automatic - new words cannot be added on the fly. There's no thesaurus.

Many editing and screen options can be altered and the majority can be set in the programs TOOLTYPES from workbench. You can move around your document by word, paragraph, document or screen. Highlighting text to be edited, or copied, is super fast. The editing facilities are amongst the best around on the Amiga today. The clipboard is not supported from *Write* - this is a real mistake! However, the document compatibility level is high. *Write* can get away with importing most document types without crashing - binary characters are stripped if they are undisplayable - but you may be left with lots of bizarre ASCII characters throughout your text.

Almost any wordprocessor will load a *Write* document, although the formatting codes will have no effect. *Write* can run on Workbench or its own custom screen in interlace or normal display modes. The colours are fully definable. Documentation is excellent. There's tips on conserving memory and plenty of real information on using the product fully. *Write* is for text based output - no fancy graphics, pretty fonts or funny columns. You can tell *Write* to use your printer's pretty fonts - but *Write* really comes into its own when used with *Page*. Together, they're a real team. Justifiably they could be called integrated.



Calc

Yet again, this program is unmistakably another renamed product - *The Advantage*. This time features have been stripped out and placed in separate programs called *Graph* and *File*. There you'll find all the fancy charts and a simple flat file database. This was done to

ensure the package could run in less memory.

The Advantage is well known for its more than average number of bugs. What about *Calc?* I couldn't compare file sizes since the portions were split off. It looks pretty much the same. The same old annoying window opens on Workbench, and then *Calc* runs in a separate window of its own or on its own custom screen - once again interlace or normal modes are supported. I loaded up the example Balance Sheet and noted that in one cell it told me that an unknown function was present. A little worrying. Is this an *Advantage* sheet running in *Calc* showing us that there is more missing than meets the eye, or just some little quirk?

Calc can handle up to a 32,000 by 32,000 cell sheet. Useless unless you have gigabytes of RAM.

In practice, *Calc* is comparable to *Maxiplan* in so far as available functions go (see figure 1). Each user will find a subset of these useful. The best part about *Calc* is it makes spreadsheets look much easier. The menus are clearly arranged with easy to follow gadgets.

Apart from the usual Boolean and Math functions and some useful Time functions, *Calc* also has:-

Statistical Functions

AVG(List) Average of all numeric values in List.
Count(list) Number of items in the list which have a numeric value.
Max(List) Largest value in the list.
Min(list) Smallest value in the List.
STDEV(list) Standard deviation of all numeric values in List.
VAR(list) Variance of all numeric values in list.

Financial Functions

FV(Rate, Number of Periods, Payment) Future value for a series of equal payments.
FVV(Rate, Range) Future value of a series of payments.
IRR(Guess Range) Internal rate of return for an investment.
NPER(Rate, Principle, Number of Periods) Periodic payments necessary to pay loan.
NPV(Rate, Range) Next present value of a series of cash flows.
PMT(Rate, Principle, Number of Periods) Periodic payment required to repay loan.
PV(Rate, Number of Periods, Payment) Present value of number of period payment.
RATE(Guess, Payment, Number of Periods, Present Value, Future Value) Rate of return for an investment that generates a series of number of period payments.

Index Functions

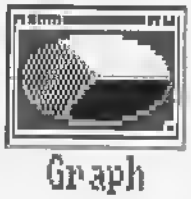
CELL(Row Offset, Column Offset)
CHOOSE(Offset, Range)
COL(Value)
HLOOK(Offset, Lookup Range, Search Value)
INDEX(Range, Row Offset, Column Offset)
LCELL(Name, Cell)
LRANGE(Name, Range)
RANGE(Row1, Column1, Row2, Column2)
ROW(Value)
VLOOK(Offset, Lookup Range, Search Value)

Calc will let you import *Lotus 1-2-3* files and *Maxiplan* files, with a few limitations on unsupported functions or use of defined procedures and macros.

Macros allows you to record and play back a series of key strokes. This is useful for automating often used procedures, or controlling user input. Even more impressive is the AREXX support, which enables a script to be linked to a cell. This has many uses for linking applications to create a powerful hybrid marriage of programs. One use suggested in the manual would be for a portfolio of shares. An update button could trigger a terminal program such as *Atalk-III* to call a modem service, retrieve the latest figures and automatically update the spreadsheet. Sounds great, but you'll also need Workbench 2.0 or AREXX and a little knowledge about AREXX scripts to get it all going smoothly.

Another nifty feature which also makes good use of *Write* is the extended Cell Note function. Any cell may have a text file attached to it. You'll need to run Write first, then run *Calc*. You can then attach a text file to a call using the Commands/Cell Note/Extended option. Now when you click on that cell, *Write* will jump forward with the text file loading up (or loaded if you have a fast hard disk). When you've finished, use the Send Text Home option (the same as you can when you use *Page*), and the text is saved and you're returned to *Calc*. A powerful feature for *Hypercard* type functions.

The print option includes a powerful sideways option for turning big spreadsheets 90 degrees to fit them on your dot matrix printer. We had a few little problems with the print option. Ensure each cell width is as wide as the widest text in that column. Overall *Calc* is reasonably powerful, especially when combined with *Graph*. The manual is also reasonably thorough, with plenty of tips and practical information. A few more examples would have been handy - there is room on the disk for these.



Graph

Think of *Graph* as *Calc* with enough editing facilities to edit your data, but enough removed to leave room for the *Graph* functions. A picture can tell a thousand words, and turning data into information by making it a picture is the purpose of *Graph*. Suddenly, sales figures become pie charts, class test results become scatter charts, monthly turnover figures become bar charts and everything is oh, so much clearer now.

Once you're staring a graph in the axis you can save it as an IFF image, CAD file or *Professional Draw* clip file - which you can then load into *Page* and print out on your Postscript laser or dot matrix printer. Of course, you can print from *Graph* too. Unfortunately, exported images are minus the all important legend and surrounding text explaining what it all means. A silly thing to leave out! There is lots of control of formats, headers, footers, data range, colours and textures. Easy to use, even if you're not into statistics.

TABLE 1

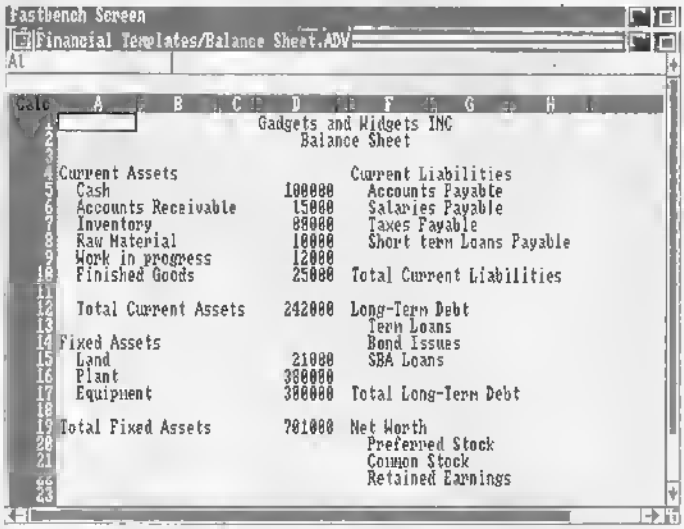
Name	Address	Phone	Occupation
Brain	13 Smith St, Balmain	987 551	Candle Stick Maker
Ian	52 The Crescent, Smi	666 784	Freelance Bike Rider
Jane	11 Smooth Way, Paris	234 123 674	Designer

File

Yet again, another extract from the original *Advantage*. Yet again, image *Calc* without all the *Calc* options, leave the editing bits behind and add a few flat file database options. What you have is a spreadsheet that works like a list manager. Data is organised in rows or records, with each column being a separate field. For example a simple address file might look like the one shown in **Table 1.**

Such an arrangement of data is not your serious answer to most business file needs which in many instances require cross references to other files such as inventory, transactions and the like. So, it is just a list manager - the word database is almost inappropriate.

Creating a new list or template is easy. Field editing is fast, with eight different types allowed for, helping to keep control on what the user may enter into each. Types include Text, Currency, Integer, Euro Date, Numeric, Logical, Date and Time.You can browse or edit your entries. There are also a number of powerful options such as range selection and mass editing - which unfortunately may not be conditional.



In full-screen each record is presented as one screen, one record at a time. The fields may be arranged so that all can be viewed together for easy editing. You can define your own screen formats, giving each file whatever name you please.

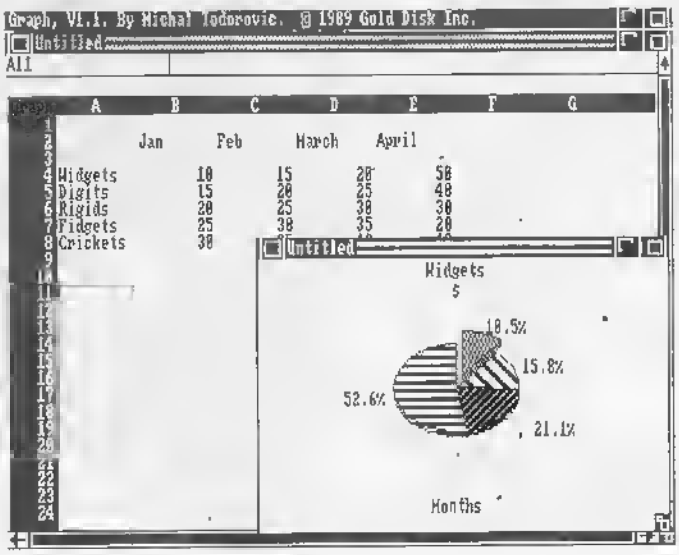
Multiple indexes are allowed, enabling you to keep your database in some sort of order. Several indexes may be open at one time, with each additional index further prioritising your data.

Getting information out of your database is achieved using filters or reports. A filter is a more specific method of selecting a range of records which fit certain criteria. For example, you might want to print labels for all of your clients or friends who own an Amiga. Looking at a field in their record called 'computer' you could print all those which contain the word 'Amiga'. Of course, that's assuming there is some way to print labels!

The report option is a little limited. You can only print out the data in rows and columns, however you can select which fields and in what order they will be printed. You can print to disk, and there's the option to add a header and footer if required. The contents of fields can be adjusted according to a formula, with a portion of the functions supported in *Calc* available for use.

An AREXX port is provided too - meaning it is possible to write crude but workable scripts to perform complex data operations which must be often repeated. Of course, this is still limited by the fact you can only have one file open at a time. There's also a useful Paste *dBase* function, which requires you to first have a suitable file definition loaded up. It's a shame *File* can't create one automatically.

Overall, *File* is a reasonably powerful list manager which could handle many small files which need to be kept around your home or office. However, there are some annoying limitations, especially when it comes to printing out your data.



Page

This one really has me puzzled. It's not just what it appears - *PageSetter* with a new name. *Page* actually has a number of features which are not in *PageSetter*, and not in *Professional Page* - but they're together here in *Page*. As far as desktop publishing goes, *Page* is no match for *Pagestream* or some other programs. However, in the low end publishing world, *Page* would stand up well against *City Desk* or other cheapie entry level programs.

Outline font technology is included, which means you have a huge selection of fonts (although only two are includ-

ed), and whichever you choose they'll always look their best. On screen they're very readable, and on a dot matrix printer the quality is astounding. You can print to a laser printer too if need be, as there's full PostScript support.

In the feature department *Page* offers all that we've come to expect as normal in the world of desktop publishing. It is a full-blown package with a high degree of functionality. Each page is made up of boxes which may contain text (imported from any one of seven different file types), bitmap graphics - including 256 grey scale images from a scanner or digitiser, or stuctured graphics created using *Page* or imported as a *Professional Draw* Clip - of which many are now available.

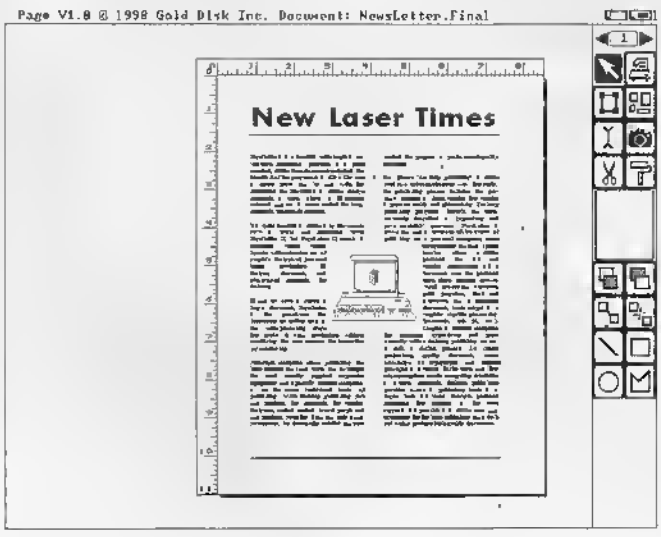
When you create a new page you have the choice to automatically generate a number of pages with preset margins, columns and gutters. Each column can be automatically linked too, meaning the text will flow straight from the end of one column into the start of the next. Boxes on top of boxes can be overlaid, or they can be selected to cause the text in the lower box to flow around the top box. This is great for placing graphics, headings or page graphics. The settings for each box can be adjusted simply by double-clicking on the box. A small window then gives you the option to select a border and fill, adjust the margins, TAB settings and box position along with a few other functions.

Boxes can be moved around together or as a group. Each text bex can contain many fonts, selected from the type menu. You can make many of these selections using keyboard short-cuts, which soon turn you into a very fast layout artist. However, for me, a serious *Professional Page* user, these short cuts were a constant source of frustration as they were just that little bit different from what I was used to. Why don't Gold Disk settle on some sort of standard for such things as selecting a font or point size?

The style menu offers you the ability to make text Bold, Italic, Outline, Underline, Shadow, Superscript or Subscript. *Page* has no kerning, however you can adjust the line spacing and select from any type of justification. Text editing is reasonable. The four levels of magnification help, as does the option to use interlace mode if you have a good screen filter to a Flicker-Fixer. Full cut, paste and copy functions are available along with a simple search and replace ability.

In practice, it's best to get the text right before you place it into a layout. However, if you forget to finish editing, you can run *Write* in the background, highlight the text you wish to export, and then zap it across from *Page* in one keystroke (see "Write" section for more details). Layout tools provide you with some handy options for speedy page design. Measurement can be in inches, picas or centimetres. You can have a grid of any size which you can optionally have all boxes automatically snap to. The box outlines and column guides can individually be turned off and on.

The fill pattern for text or boxes is something I envy - even *Professional Page* doesn't have this (next version maybe?). You can select from any of 16 fill patterns, or define your own. There are also a range of gadgets for manipulating fills - flipping them or rotating them as required. What is lacking in return for these wonderful fills is the old ink colour setting of *Professional Page* which lets you have grey text, or coloured text.



Page is a good quality mid-range publishing package for the Amiga. It offers all the basics plus a few whistles. It's very fast and rock solid. This is probably the best value program included in Office. Together with *Write*, you have all you need to create your own stationary, brochures, newsletters and the like. The output is superb and the manual is good.

Integration

So, after looking at the parts, what do they all add up to? The integration has been touched on, but to sum up, here's what you can do.

Text from *Write* can be used in *Calc* and *Page*. Graphs from *Calc* can be used in *Page*. Spreadsheets from *Calc* can be used in *Graph*, or exported as ASCII and then into *Page* or *Write*. *Graph* can use File files to make graphs. *File* can export to *Write* - ideal for a mail merge. *Page* and *Write* are about as integrated as you could ever hope. Last of all, you can also get *Lotus 1-2-3* and *Maxiplan* worksheets into *Calc*.

So, yes, the integrated tag is justified. Mind you, I would still like to see something equivalent to *Q&A* (an MS-DOS integrated package) available for the Amiga. Well, dream on, because this is it for now!

Conclusions

All the above programs should run in less than 512K. However, if you have several running at once, or you plan on using all the features of *Page*, one megabyte would be preferable.

Gold Disk have not made any duds. Sure, some of their products seemed to lack a few things. But the bottom line is, this is a bundle that contains real value. If you buy it, the programs aren't going to leave you thinking something you really wanted is missing. *Office* is truly a desk load of useful programs that could turn your Workbench into a real office.

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Amiga Action Replay

by Andrew Farrell

Datel Electronics have been replaying the action on the Commodore 64 for some years. Now they've cooked up a mean piece of action-grabbing hardware for the Amiga with many of the same old features as the big-selling C64 Action Replay cartridge, now pushing version 7.0.

When it comes to grabbing graphics, making a backup or trying to beat a hard-to-win game, the Action Replay cartridge is the device you need. The latest version of this neat unit connects to your Amiga expansion port with no pass-through. On top of the cartridge are a number of buttons and dials.

The first is called Freeze. This activates the main menu and allows all the snapping and grabbing functions. A small power LED lets you know all is well. At the other end of the top face is a SLOMO switch. When in the on position, a small knob allows you to dial up the speed of your Amiga. This is great for slowing down high speed action games or animations to grab images or see how to get past the trickier bits.

The unit comes with a utilities disk and a small 32 page manual which is organised as a reference manual. Some features are a little hidden away and there is no index to make location of obscure functions easy. Poor marks for this area of the product.

Plug the cartridge in (with the computer off!), and power up. You'll see a new sign-on message and then everything returns to normal. The fun begins when you press the Freeze button.

The Freeze button

Once you get to the point where you want to save the loaded game in memory (or any other program), or the right image is on screen (the SLOMO button can help here), press the Freeze button. You'll be presented with a simple text based command line prompt. From here there are a whole host of bizarre two and three character commands you can enter, and a number of function and hot-key type operations.The most useful of these for the beginner is Help. It's great to see someone actually making use of this key. All software developers please take note.

A few basic screen editing keys are provided. You can exit at any time by pressing 'X' - a double 'XX' will disable the cartridge completely. The only way to get the replay functions back is by a complete hardware reset.

Before you can SAVE anything to disk, you'll need to create an Action Replay FDOS disk. Apparently, Datel have introduced some fandangled new disk format. The downside of this is that you need the cartridge to load the resulting disk if it contains an entire program. Single IFF files can be copied off the disk using one of the included utilities. You can create a self-booting FDOS disk that could be distributed to those without the cartridge. However, this would make the path for would-be pirates a lot easier. So, Pactronics have chosen to remove the Install FDOS function from the utlilities disk.

Formatting is super-fast, at around 3 seconds I wondered how it could possibly be reliable. Who knows what wonders they've built into this cartridge to help it all work smoothly. Once the disk is ready you can save the program in memory. The file is first crunched and then saved. You may choose to save a specific portion of RAM up to a maximum of 940K.

Whereas SA "name" saves the current program, LR "name" LOADS it back. Interestingly, under the Reloading A Program heading I also found out how to SAVE a picture and SAVE a sound sample. Indeed, a well organised and arranged guide.

Feel like a little cheating?

A powerful function for those who like to beat the game at its own thing is the trainer option. By spotting locations which change between lives being lost using the in-built monitor, Action Replay allows you to edit the location you discover which contains the life's value. Bump it up a few and you can play a lot longer.

For real hacks the monitor provides simple assembler and dissassembler functions. Hexadecimal, binary and decimal numbers may be entered. Access to the COPPER list is provided along with editing commands. You can also edit sprites (useful for removing missiles in games), or view memory as text. A Range of U commands provide full access to system status information.

There's a handy hints and tips section which provides some real information on how to get many of these facilities to work for you. The text is oriented toward the more experienced user, with many terms best left to real programmers.

Grabbing pictures

Although little is mentioned about the many image manipulation and picture grabbing facilities of the cartridge, section 10 lists a whole host of additional features which allow you to get the right image you want. Many game screens are actually a combination of a number of different graphics elements. Action Replay does not happily combine these into a bitmap you can just grab. Sometimes bits seem to be missing.

Continued on p20

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The Additional features let you alter things like the number of planes, brightness, playfields, border size and location, HAM mode, colour sliders and plane locking. More advanced functions include rotation and scrolling.

Another useful function is the RAM tester, which can test a range of RAM for faults. How it is tested or what other messages apart from RAM OK can be generated is not mentioned. Datel have also included a useful Virus checker which keeps a watchful eye on system vectors which are often altered by virus programs.

Overall

The point at which you snapshot the program you want to copy can make all the difference. My first attempt at copying *Turbo Challenge* was unsuccessful - I forgot that each track was loaded from disk. I tried again, grabbing it when the race had actually started. Obviously this would limit the resulting backup to playing one track. Very limiting!

No mention is made in the manual of how to deal with multi-loaders. Of course, many games don't multiload and could be handled without any of the aforementioned problems.

Although the manual is a bit spartan, the cartridge has a number of very useful features. Since there is nothing else like it, Amiga Action Replay stands alone as the only solution to the problem of snap shotting memory. I felt the features could have been explained more clearly with more examples on when to use them. Very few people understand the Amiga's many graphic modes or the concept of colour planes or playfields. Clearly much of what is included was meant for more than what the hackers call 'lamers'.

Nevertheless, it's a powerful backup tool which will beat most disk protection schemes. A few more features could be added, and I'm sure in the usual Datel style these will appear in version 2.0, 3.0, 4.0 and 5.0 until the Amiga gives up and they bring out a new version for some other machine! ❑

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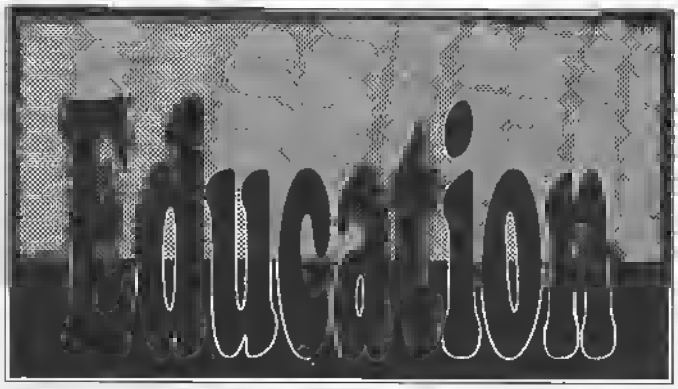

COMPUTERS IN SCHOOLS, WHAT ARE THEY REALLY DOING?

by Anne Glover

Did you read about the Primary School students that were tracking the progress of the Trans-Antarctic explorers, as this historic event was still taking place? Have you seen some of the multi-media extravaganzas our High School students are producing these days? These students are ready to set the world alight!

Your school doesn't seem to be blazing a trail for all to see? The students haven't yet appeared on the cover of *Time* Magazine, or even in the local paper? Don't worry.

The objectives of Computer Education can be just as adequately met in a less obvious or dramatic manner. After all, it is the skills and the concepts the child develops in the process of working with computers that are vital, not necessarily the final display piece.

The computer enhanced animated videos, products of Desktop Publishing and other multi-media 'Fantasias' are great for motivating the students and giving them something to work towards. The projects also serve the purpose of tying a range of computer activities together. Each project will most probably have extensive educational benefits in its own right.

However, while the final showpiece may be of a professional standard, it will not alone ensure that each participant receives a thorough grounding in the science of computers.

Teachers are now aware of the importance of computer literacy and of the role technological change will have in their students' lives. They also realise that computers can be used to enhance learning in many fields. Computers can be used to stimulate and motivate in the traditional classroom situation.

The hardware setup varies from school to school. Primary schools may have a computer in each classroom or access to a group of computers in a shared room. One precious computer may take its turn rotating between a few classrooms.

Many of the Secondary Schools I contacted seem to be moving towards a system of using different computers to meet varying needs within the school. They may have a couple of classrooms set up with a dozen or so computers. These rooms are largely used by the Computer Education/Awareness classes but are at times also available to other faculties through a booking or rotation system.

In addition to the Computer rooms most Secondary Schools also have a range of other computers. The Administration area, staff rooms and library may have compatible computers, while the Art room, Music room, Social Science room or Maths classroom may each have different hardware to best meet their specific needs.

Different schools and the individual teachers in the schools are also handling this technology in varying ways. The needs of the student or students, the personalities and experience of the teachers and the funds available, as well as Departmental requirements, all influence the way in which computers are being utilized in our schools.

Real applications

Some of the different methods teachers are using to incorporate computers into the classroom are outlined below. Some combination of these methods would be found in most schools.

WORD PROCESSING - Using a basic package, a number of schools have launched straight into story writing using their computers. This allows children of any age and at any stage of development to foster a love for writing. Their reading, writing, language skills and creativity will grow, uninhibited by the age old problems of poor handwriting, inadequate spelling skills and the boring task of rewriting drafts.

As the activity of writing will be more enjoyable, the student will be interested in writing more often and in producing a more acceptable product. As they write and rewrite, a multitude of language skills will naturally develop, so the theory goes.

Some kindergarten classes are learning to touch-type. Before those bad habits have developed, is the ideal time to learn this skill (my own two very

worn out fingers will testify to that!) Those kindy kids are now going home and asking "Daddy, why are you using the wrong fingers?"

At the opposite end of the scale, students about to enter the work force (or hoping to) are producing professional looking resumes with their word processing packages.

ART AND MUSIC classes are getting into computers in a big way. The Deluxe series (*Deluxe Paint, Deluxe Video, Deluxe Music Construction Set, Deluxe Photolab* and *Deluxe Print*) are extremely popular. Now at the reduced price of $99 each they are also more accessible to budget stricken resource selectors.

DESKTOP PUBLISIIING activities are also taking place in English and Social Science classes and in many primary schools. Many subject areas are taking part in the multi-media explosion, with quite young students producing a result with a degree of expertise that was previously thought impossible.

COMPUTER GRAPHICS are being used extensively in Maths, Home Seience, Art, Industrial Arts and Computer Studies as well as by the multi-talented Primary school teachers. Students soon realise that they can use the computer as a tool to create designs that are in their heads. They are no longer hindered by the inability to draw a straight "straight" line or a truly circular circle. LOGO is a popular choice here.

DATABASES are being designed an/sor used in most schools. Social Science classes for example are collecting information, sorting and organizing it, before storing it in their own database for later reference. The human brain can no longer store even a small proportion of the myriad information our society has generated. Our children need to be able to access and use information, rather than just remember a small number of facts.

PROBLEM SOLVING ACTIVITIES are also used extensively in schools. This is another important skill that is being developed often with the assistance of the schools computers. Databases, graphics programs and simulation games are used in this area.

Simulations allow the student to experience and interact in an event in a safe, controlled environment. They are able to replay events and even make varying decisions and observe the results. The students could simulate taking part in a critical event in our history. Dangerous scientific experiments can be conducted, or an extravagant city of the future can be constructed, all in the security of their classroom. They can observe the consequences of their actions then save their work to make adjustments and more observations next lesson, - or after lunch!

Those classes that are in **TELECOMMUNICATIONS** have the whole world at their feet (or monitor screens). These students are able to experience historic events as they happen. No longer will we always need to wait months or years for detailed materials to be published and available for study.

Other schools are using their modems in a very practical manner to link up small groups of student in a particular subject area. Schools that are able to share some of their teaching resources via telecommunication will broaden their students' choices and their knowledge base. Within schools teachers are at times using their computers and a VCR to record lessons for later use or to take more advantage of a guest speaker or specialist.

The letter you moy hove recently received regarding your child's move into SP betting wos probobly stored in ond produced on the school's PC

Students of all ages who don't speak English in their own home are often unfortunately disadvantaged by our Education system. The PC can provide some assistance here too. Using a word processor they are freed from many of the traditional stumbling blocks they would normally face. Some teachers are assisting students to produce books in both English and their home language to accelerate their learning.

With the appropriate software and a skilled teacher, the needs of all students including the very able and the less able are more likely to be met. Remedial reading, basic literacy skills, everyday Maths and living skills are being taught effectively using computers. If the introduction of computers into schools significantly cuts the future adult illiteracy rate, that result alone will justify their purchase.

PERSONALISED computer learning programs are walking students through whole units of work. These are usually occurring outside schools or at least outside school hours. For example, a whole math course could be completed in this way. These programs may be of great assistance to students who have gaps in their understanding due to absence or poor self-esteem. They must however be individually designed to obtain the maximum benefit.

Teachers are increasingly finding suitable software to assist them in teaching courses right across the curriculum. Primary school teachers have always been great at integrating areas of study within a theme. These days the PC in the classroom or the library is often an integral part of those cross curriculum studies.

Secondary teachers are incorporating computers across the curriculum at a varying rate. The Computer Education classes have a high profile and some teachers prefer to leave the area to the specialists. Other teachers can't get near the computer room because of the limited resources and the exploding demand.

COMPUTER EDUCATION is usually an elective subject taught alongside the other electives. It is very popular. The relevant Education Department in each state gives guidelines to the teachers that are then Interpreted to meet the students' requirements. Programming is often one of the many areas of study; it may be taught as an end in itself or more usually to demonstrate to students, ways of utilizing the computers' capacity.

COMPUTER AWARENESS is often a broader introduction to computers studied in Primary or Secondary Schools. This subject may be a unit on its own or it may be a part of any number of other units of study. Computer Awareness is generally more flexible than Computer Education and every child is hopefully exposed to it in some way.

Administration

From an administrative 'peint of view, computers have infiltrated the office. They are used to record and update classes, set up timetables, store students' details and produce communications materials. The letter you may have recently received regarding your child's move into SP betting was probably stored in and produced on the school's PC. Perhaps your child also received their SP information via

the school's modem, maybe in their maths class.'

Some school libraries now have their catalogues computerised. Other schools have a PC in the library to allow students to become familiar with the machines, to access information or simply to play games. Many staff rooms now have computers to store information or to draw up charts etc. Reports are often being simplified with computers and marks are being recorded and standardised.

So computers have certainly infiltrated our schools in the last few years.

Our teachers and our children are becoming increasingly computer literate. The whole education system is slowly becoming more comfortable with their computers. Soon every school leaver will have a thorough understanding of the role computers can play in our society. This understanding, and the processes and skills are all important. The flashy products are just facilitators of that learning.

As children are developing their skills, they may not perceive themselves as learning, especially if they are not working on a concrete product such as a newspaper. So, next time you ask your child what he did at school today and he replies "nothing", or "we just played with the computers", remember that from tiny seeds great knowledge can grow.

Many thanks to all of those friends and colleagues I annoyed for information about their schools. Thanks also to the Computer Education unit of the NSW Department of School Education.

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DEALER ENQUIRIES WELCOME

Barney Bear

by A. Glover

Barney Bear is a sweet little companion to accompany your young child in his or her adventure into computing. Designed for 3-8 year olds, Barney Bear takes your child to school, or to a farm. In another adventure Barney travels into space, but we won't be looking at that piece of software today.

Barney Bear goes to the Farm and *Barney Bear goes to School* are ideal for young children, the under 5s to be precise. Although the packaging tells us they are suitable for 3-8 year olds, the "average" 6-8 year olds would only obtain very limited value out of them.

The activities do vary in their degree of difficulty but they are all directed at the fairly young. Each task has just the one level, so the child cannot select a higher level of difficulty as their skills develop.

Young children will enjoy the way the program proceeds, with each classroom activity or farmhouse story lasting for a very short session. If they have selected the *Colour Game*, for example, the child will have three short turns, before returning to the menu to select the next activity. The littlies' attention span is not so easily exceeded as a result.

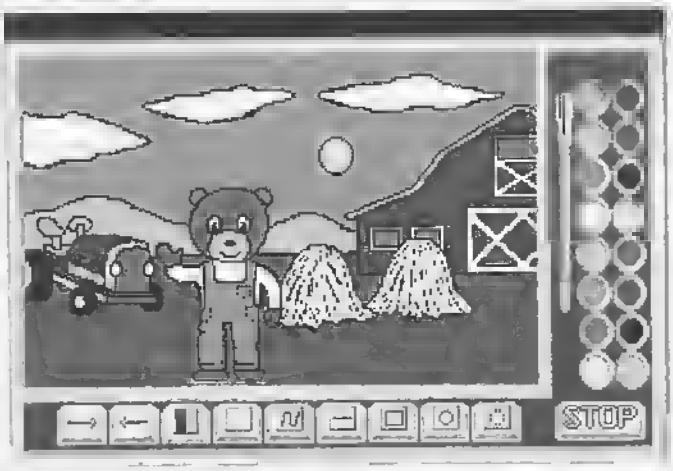
This procedure also allows the small child to try lots of different activities in a short space of time, or have many, many turns on the same activity.

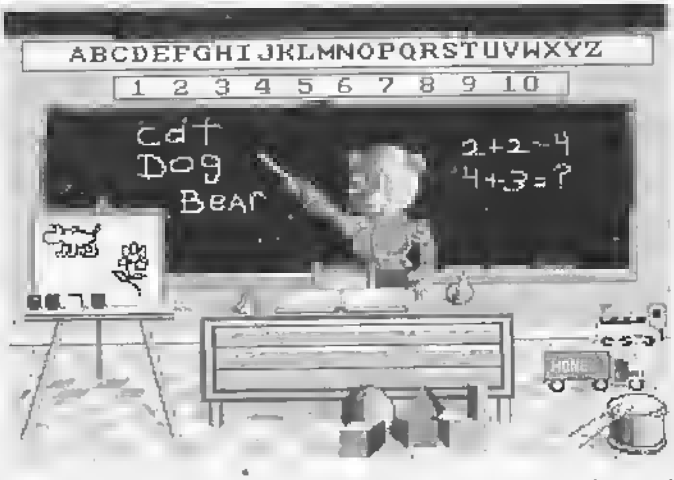
A 4 or 5 year old will be able to handle these packages on their own after an initial introduction. The child will not need to be able to read, as the menus in each case are full screen graphics. Simply clicking the mouse on the appropriate part of the screen activates the chosen game.

The talking voice is the standard Amiga "voice". It is a bit harsh and assertive for shy young children, but you do get used to it quickly. The voice is fairly easy for children to understand, they should find their way around with ease.

The child uses the mouse to interact with the software. The *Spelling Game* in *Barney Bear goes to School* also uses the keyboard. So if you are looking for a program that uses more than the mouse to interact, *Barney Bear goes to School* would be preferable to *Barney Bear goes to the Farm*.

The latter however, has the better painting program. So you need to determine your priorities in the light of your child's needs and the features of your current software library.





Both Barney Bear packages begin with a short interactive story. In these stories the young child uses the mouse to help Barney Bear proceed through his morning tasks. This part of each program is certainly non-threatening but also not very exciting.

They can vary their responses but they are only minimally involved in proceedings. My 4 year old quickly learned to skip straight to the second part, where the real action is.

Here is a more detailed outline of the activities in each of the two packages:

Barney Bear goes to the Farm

Part 1 The Farm Yard

Barney is visiting his Grandparent's farm. Your child can use the mouse to explore the farmyard and activate the objects in the story. The pigs "oink", the horse "neigh"s, we are told about the tractor and Barney milks the cow. It's not exactly riveting stuff, but 3 or even 2 year olds will relate to it well.

Part 2 The Farm House

Barney settles into Grandpa's lap to listen to some stories and play some games, such as the following:

A. WHAT BELONGS TO ME? Select the correct object (from a choice of five) that belongs to the farm animal illustrated.

B. SILLY SCARECROW Use the mouse to change the scarecrow's body, head and\or legs to make silly or sensible combinations.

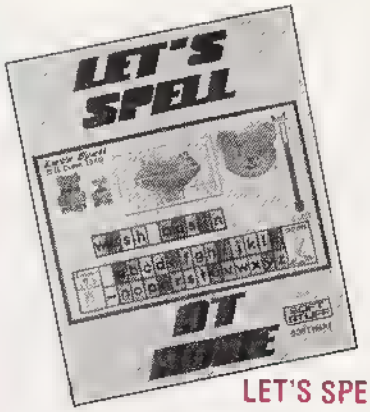
C. I CAN READ The child can choose from 10 short stories about farm animals. Each story has about 30 words spread over five pages. The words are shown on the screen and read by the Amiga voice. All of the stories are very similar to assist new readers. Older or younger children may not wish to explore all of the stories because of their similarity.

The writing is in CAPITAL LETTERS which may assist children who are only familiar with keyboard lettering but may confuse those learning to use the lower case letters.

D. THE SEED This is a short story read to the child. The words don't come up on the screen. It is very limited in appeal and probably won't be used often.

E. HEALTHY BEARS is another short

Improve your child's education at home with

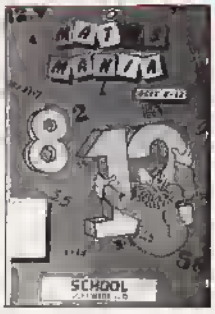


LET'S SPELL AT HOME

This innovative and exciting program teaches your children letter recognition and spelling using common items from around the home.

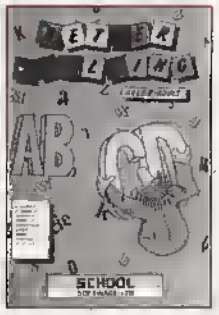
LET'S SPELL AT THE SHOPS

Children will enjoy wandering around the shops and spelling the selected items from the shop display.



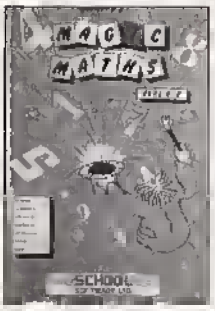
MATHS MANIA

One of the best selling educational programs for the C-64 is now released on the Amiga and covers multiplication and division.



BETTER SPELLING

This program covers punctuation, grammar usage and more in an easy to follow manner with the emphasis on rewards for correct answers.

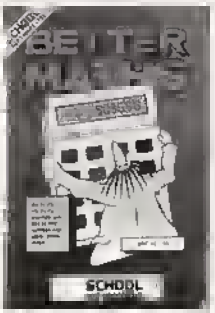


MAGIC MATHS

With greatly enhanced graphics and sound effects, MAGIC MATHS covers simple addition and subtraction and can be totally operated by the mouse for ease of use.

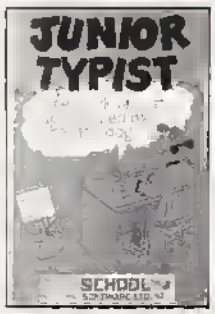
THE THREE BEARS

Children must use logic, forward thinking and planning to achieve a solution to this fairy tale based graphic adventure.



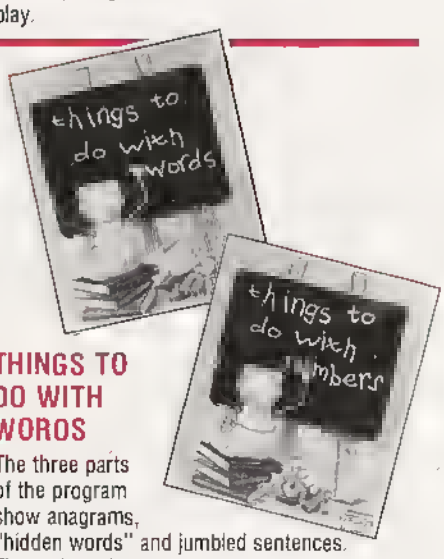
BETTER MATHS

Covering a range of topics from fractions to equations, BETTER MATHS features improved graphics and sound effects to encourage your childs use of this program.



JUNIOR TYPIST

JUNIOR TYPIST puts kids on the right path by teaching them correct hand and finger positions, drill them in letter, word and phrase typing.

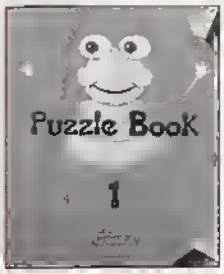


THINGS TO DO WITH WOROS

The three parts of the program show anagrams, "hidden words" and jumbled sentences. The entire suite of programs was written in conjunction with a primary school teacher.

THINGS TO OO WITH NUMBERS

This was written to show children different ways to apply numbers to problems. It covers numerals as a measurement of time, numbers as map co-ordinates and a number as a component of another number.



PUZZLE BOOK 1

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story showing your little bear how to stay healthy. The only interaction by the child is in turning the pages.

F. MY COLOR BOOK (yes, it is an American program) The child has a choice of 10 pictures to colour (fill) using 16 colours. They can wipe the screen and draw their own designs or edit existing pictures with ease. Features include the ability to draw circles, eclipses, boxes, lines and the famous cycling colours. There is however no print function.

Borney Beor goes to School

Part 1 before school

The child uses the mouse to help Barney wake up, eat breakfast and prepare for school. Different objects could be activated next time around, for a few suprises. This section is for the very young.

Part 2 At School

The school room scene is the menu for the following:

A. SPELL IT This is a very simple spelling program. A three, four, or five letter word is displayed in capital letters with its picture. The child is asked to spell the word by typing in the correct letters. Incorrect letters are simply ignored by the computer.

This activity would serve as a simple introduction to both spelling and use of the keyboard. The child does not need to be able to read or spell to take part in this activity.

B. HOW MANY After counting the objects displayed (up to 10) the child uses the mouse to indicate the correct number.

C. COUNTING The computer counts some objects for the child.

D. THE ALPHABET The letters of the alphabet are displayed and vocalised. Then objects beginning with each letter are displayed in turn. The child is an observer.

E. COLOURS The child is asked to select a particular colour using the mouse.

F. SHAPES Another tutorial this time about shapes.

G. PAINTING The child has a choice of 16 very simple drawings to colour. Clicking on the mouse fills the spaces with the selected colour. There are no freehand or erase functions here.

To sum up

The Barney Bear series is a very sweet, non-threatening way of introducing a young child to the computer. It is suitable for three, four, and five year olds, it would not extend children above that age and ability range.

Significant parts of each program are not particularly child centred. However, each activity is very simple to play and easy for a child to operate on their own.

The mouse alone is used in each activity, with the exception of *Spell It* in *Barney Bear goes to School*, which uses the keyboard. On the other hand, *Barney Bear goes to the Farm* has the better painting program of the two.

These programs are certainly worth a look if you have a little bear at home.

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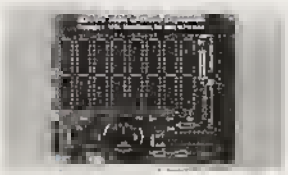

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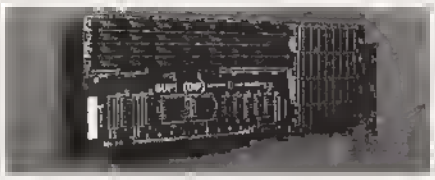

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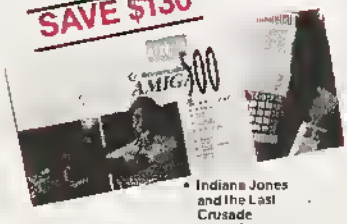

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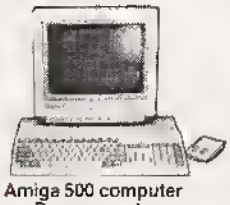

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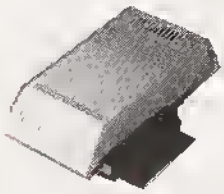

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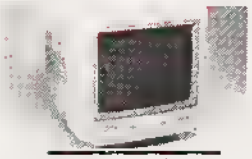

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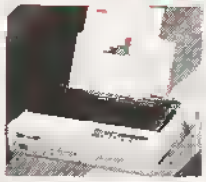

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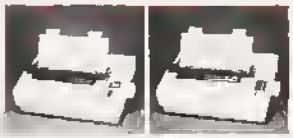

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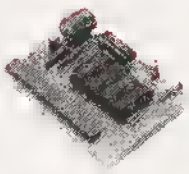

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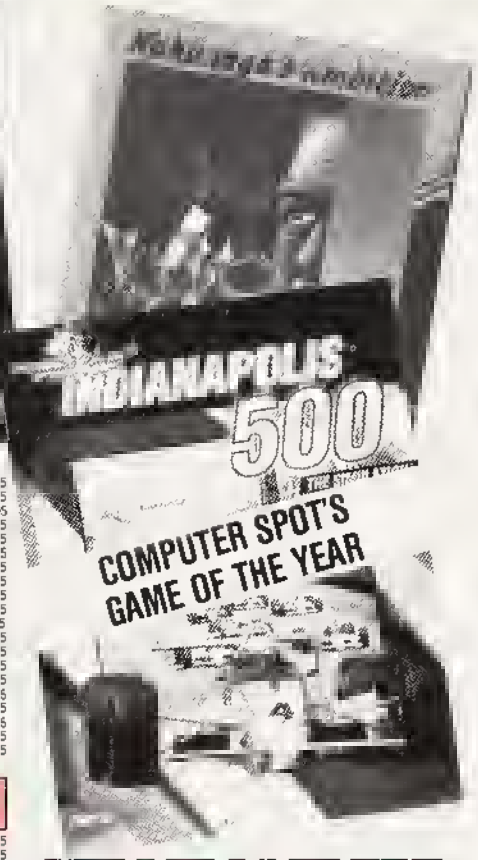

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Mega Maths & Primary Maths Course

reviewed by Wilson Fletcher

Recently I had the opportunity to examine a couple of programs in the computer education market. The two programs were *Mega Maths* - a program aimed at high school maths students and *Primary Maths Course* which is obviously aimed at Primary school children.

Mega maths

The *Mega Maths* program would be best described as a drill & practice program. The package consists of two disks on most computers but has been reduced to one disk on the Amiga. The disk is inserted into the computer at the workbench prompt and a menu loads up that presents you with a list of topics on the first 'disk'. You select the topic you want by pressing a letter key A through to N. If you select 'N' then the menu for the second 'disk' is loaded. An unfortunate aspect of this menu system is that it reverts back to the first menu whenever you exit a module. A small but annoying problem.

In each module you are asked a variety of questions relating to the particular topic selected. If you were studying the topic, or if you were perhaps a maths teacher then you would recognise the questions as being questions that drill the basic formulae or technique for that particular topic. The questions are easy if you are familiar with the concepts and formulae required. The questions are useful in providing a new source of questions in a way that is more unique than the usual textbook method.

When answering a question in *Mega Maths* you get two attempts to answer correctly. If your answer is wrong then you are given a hint usually in the form of a list of steps to follow and perhaps a formula to apply. If you get the answer wrong a second time then the working and final solution are shown on the screen so that you can work through it.

The questions that you are asked by *Mega Maths* may require you to put pen to paper in order to work out your solution, so if you try the program make sure that you have these handy. The program is not really graphics based and indeed could utilise the graphic capabilities of the Amiga a bit more (when printing a square root for example). One good feature of the program is that when you find the equation of the tangent to a curve then it displays a graph of both the curve (quadratics only) and the tangent. This graphing feature is also provided for maximum/minimum problems and for roots of quadratics problems.

If you need to know more about the content of the program then, as briefly as possible, the topics are: Permutations & Combinations,Straight Line Geometry, Operations on Polynomials, Circle Geometry, Remainder Theorem, Inequalities (dull), Logarithms, 3D Geometry, Quadratic formula for roots, Complex number, Roots of Polynomials (quadratics), APs & GPs, Binomial theorem applications, Differentiation (including product & quotient rules) & its applications, Trigonometry in 2nd, 3rd, 4th quadrants, Trig identities, partial fractions, Integration (including by parts) & applications.

If you are a two or three unit year 12 student & want to drill some basic formulae in these areas then perhaps you will find this program useful. Be mindful that the program is not an exhaustive coverage of the maths course. If you are a maths teacher & your school is equipped with Amiga computers then I think you would find *Mega Maths* an interesting acquisition. There is something more novel about being asked to find the equation of a tangent to a curve by a computer rather than a text book.

Primary Maths

The *Primary* course program is aimed at children aged between three and twelve. It takes two disks on other computers but once again the Amiga version comes on one disk. It operates in a similar way to the *Mega Maths* program i.e. you select a topic by choosing a letter, the final selection in either menu will switch you to the opposite menu. Fortunately, in this program you are not continually switched back to the first menu every time you exit a module in menu two.

The Primary course program attempts to provide a graded set of activities from counting through to operations on fractions. The basic progression is: counting, addition, subtraction which is done with units, tens and then hundreds to increase difficulty as understanding improves.

In each of these modules the students are helped by the presence of coloured boxes and if a correct response is made you are given a musical reward. As an additional incentive there is a different picture with each module. A portion of the picture is coloured in a bit every time a correct answer is given.

In my opinion the colours used are plain, the pictures are uninteresting and take forever to colour in (even for me and I'm a maths teacher), and the sound is terrible, its like a siren. I press the continue key as quickly as possible to get rid of the noise (maybe kids like it?)

The program also quizzes times tables, short and long multiplication and, my favorite, operations with fractions. The operations with fractions module is good and I would use it at school. The multiplication module in my opinion (and that of a colleague) uses a confusing method of multiplication.

So, do you buy it? That's up to you. If you are a parent and thinking of buying it for home use then try to get a demonstration. I think that for young children the counting activities may be good as long as it can hold their attention. The times table drill is something I think a lot of students could do with. If you are a primary teacher with access to Amigas then you could probably find a use for it.

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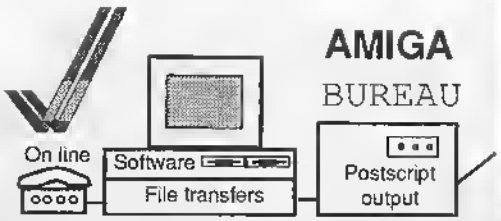

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Baat disks - How to make them

A lot of new users get confused about "boot" disks and "data" disks.

◆ A Boot disk is any disk which will actually load itself ("boot up") at the Workbench Hand screen (when you power up);

◆ A data disk is just that - it is formatted to store data such as word-processing files & graphics, etc., but won't "boot up" (start to run).

To make a Data Disk, all you need to do is Format or Initialise a disk either from the Workbench or the CLI. Then it is ready to store your files. To make the simplest Boot disk with the maximum amount of free space, follow these steps:

◆ format the disk (say the name you give it is "Boot")

◆ make the directories S, C and LIBS

Enter in the CLI:

makedir boot:s

makedir boot:c

makedir boot:libs

copy the Loadwb & Endcli commands from your Workbench disk's C directory to that of your new disk. Enter:

copy c:loadwb to Boot:c

copy c:endcli to boot:c

◆ since you at least want to be able to see icons, you'll have to copy over the Icon.Library: Enter:copy libs:icon.library to boot:libs

◆ then create the simplest possible STARTUP-SEQUENCE.

Stortup-sequence

◆ Open your favourite text editor, or Word processor if it can save files as simple text-only files, as most can

◆ create the file LOADWB↵ ENDCLI↵ and save it as Boot:s/startup-sequence

◆ finally, your disk needs a "BOOT-BLOCK" which is a way of letting the system know that the disk is bootable.

So you have to INSTALL it.

Enter in the CLI: INSTALL DF1: if your disk is in the external drive. If you haven't got an external drive, get one! It'll make life easier for both of us. You'll have to enter: INSTALL ? then replace your workbench disk with your new disk, and then enter: DF0:You now have a basic boot disk. I suggest you keep a copy of it in case you ever want another - it'll save having to go through this procedure again. *Megadisc 17* contains very useful batch files in the TUTES_&_CLI drawer, which let you do all this with a mouse click!

Pure bit not set

There must be a lot of people who've wondered, as I did, what this means in Workbench 1.3. If you type LIST in a CLI, you'll get a listing of the current directory - here's what I got from typing LIST RAM:

```
|              empty ------rwed Today    16:16:50
pte.tmp          877 ------rwed Today    16:06:17
MB.state         357 ------rwed Today    16:06:07
MB18.state       359 ------rwed Today    16:01:32
clipboards       Dir -------rwed Today   12:19:04
t                Dir -------rwed Today   12:19:11
env              Dir -------rwed Taday   12:19:06
4 files - 3 directories - 15 blocks used.
```

----rwed is a listing of *protection bits* and the missing ones are *hspa*. These stand for Hidden; Script; Pure; Archive; Read; Write; Execute; Delete. If you were to see a *p* in such a listing, it would indicate that the *pure bit is set*, meaning that the file in question has been written in such a way as to allow it to be made resident.

Resident

When you want to speed up AmigaDos, you can make some of your C commands (those found in the C directory) resident - this means that they don't have to be loaded into memory when you use them, they're already there. Not only that but you can use the same command in different processes - you don't need another copy of it in memory.

If the *Pure bit* is not set on a command and you make it resident, it should be fine, but you'll get that message *pure bit not set*, and you may get a guru if the system tries to run it in two different processes at once.

To find out if a command is resident just type RESIDENT and you'll get a list of all the resident commands.

More use from Renome

Apart from doing the obvious, RENAME in your C directory has an even more powerful use in RE-LOCATING files and directories. For example, a fellow called John Smith has a directory called JSmith in my assigned directory MD19A: where I keep all the contributions that come in for MD19. He's just told me that he's going to send me a later version of the program he sent in, so it'll have to go on MD20. So whatever doesn't go in to MD19 goes into a directory in MD19A: called MD19_Overflow. Rather than make a new JSmith directory, copy his files across, then delete the original directory, I can simply enter:

RENAME MD19A:JSMITH

MD19A:MD19_OVERFLOW/JSMITH

and the whole process happens in one hit.

Using pottern-motching to save on typing

Pattern-matching is just that - a technique used in the CLI which allows you to match patterns of files or filenames to save on typing. For example, #? = any number of any letters at all. So TH#? can be used instead of THIS, THE, THAT, THITHER, and so forth - just as long as it begins with TH.

So if there is a long file which you have to, say, copy somewhere you can just use the first couple of letters: COPY F#? TO DF1: will copy the file "fandango" (and any

other file starting with F) to DF1: Saves typing and you can be as sophisticated as you like.

Forgotten keyboord shortcuts for mouseless Amigos

The cat may have got your mouse or it's hidden under a pile of stuff and you want to use the keyboard. To move the mouse pointer around, press on the R/Amiga key and use the arrow keys to move all over the screen.

◆ If you want to duplicate a click on the mouse buttons - keeping the R/Amiga key down, press L/ALT for the left mouse button, R/ALT for the right mouse button.

◆ If a requestor pops up, one of those RETRY/CANCEL ones - keeping the L/AMIGA key down, press V for RETRY, B for CANCEL.

Whot is Diskdoctor ?

People see this system message pop up suggesting that DiskDoctor be used to fix a problematic disk and cast wildly about looking for something vaguely medical.

But have I got Diskdoctor? Yes, it's in the C directory of your Workbench disk and is a pretty neat piece of software which will usually retrieve your valuable files from a disk that is showing itself to have *read/write errors* or is *corrupt*.

All you need to do, is open a CLI or Shell (double-click on the appropriate icon on your Workbench) and enter:

DISKDOCTOR DF0:

A message will appear telling you to insert the dud disk. Do that and press RETURN and the disk will get a good going over as its tracks are rapidly analysed and the data on them re-organised to avoid bad spots on the disk. Note that a "diskdoctored" disk is often renamed *Lazarus* as in *raised from the dead* - this is not a virus, as some people have thought.

It is suggested as wise, once the whole process is finished, to format a fresh disk and copy those files you really want to keep onto the new disk. More advanced users may like to hunt down the Public domain programs *Diskslv* and *FixDisk*, which do a similar job but more efficiently.

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Haw much space left an a disk?

This can be found roughly by looking at the Full/Empty gauge on the left side of a disk window, or exactly by entering in a CLI/Shell: INFO

Here's what I get when I do so:

```
Mounted disks:
Unit    Size  Used   Free   Full  Errs  Status      Name
RAM:    84K   84     0      100%  0     Read/Write  Ram Disk WB_2.
x:      6M    8364   4059   67%   0     Read/Write  System2.0
DF0:                        No disk present
SDH0:   79M   93411  70205  57%   0     Read/Write  D
DF2:    879K  1719   39     97%   0     Read/Write  ACR_STUFF
Work:   30M   55152  8301   86%   0     Read/Write  B
Volumes available:
ACR_STUFF [Mounted] Ram Disk [Mounted]
B [Mounted] SDH0 [Mounted] System2.0 [Mounted]
```

To explain the hieroglyphics a little:

- *Unit* means original disk name, including the *ram disk*;
- *Size* is given in KiloBytes (K) or Megabytes (M) if you're talking hard disks;
- *Used* is given here in Ks, and you'll note that the Ram disk is unique in having a size exactly equal to what's been used - in other words, it grows as it's used, and shows nothing *free*;
- *Free* is the amount of space left in K again;
- *Full* gives you another view, by percentages;
- *Status* would normally be Read/Write;
- *Name* is the name you may have changed the various devices to - I've changed the two hard disks to B & D just to reduce typing. Note I didn't use the name *C* as that would have interfered seriously with the *logical device* "C:", ie the C directory of the System disk, which is given the status of a *device* by the system, and thus can be referred to as C:, just as you can refer to SYS:S as S: and so on.

In short, INFO is a very useful command for giving you precise details of how much space you've got left on any disk, amongst other things.

Make a fast one faster - crystals & setcpu/cpu

To make 68030 boards faster, especially Commodore's A2630, you simply have to change the Crystal. You can replace the 25 MHz ones with faster ones, such as a 28.63 MHz (only $10 - 15 cost). Use a proper de-soldering tool for this, and you should find that such computing-intensive programs as ray-tracers should operate noticeably faster. Mario Nictora reports an extra 10% performance on his A2630 using such a crystal, i.e., 11.5 times the computing speed of a standard Amiga.

The other way is to use the SETCPU command for A2500s or A2000s with accelerator boards (with 68020s or '030s). This is a program written by Dave Haynie, responsible for a variety of excellent PD stuff, and it has been slightly modified and placed in Workbench 2.0's C directory as CPU, though with the same arguments, namely:

SETCPU (or simply CPU) BURST CACHE

which indicates turning on *burst mode* and *caches*. Anyone with a fast Amiga apart from an A3000 could also use the FASTROM argument with this program to load Kickstart in Ram for faster 32-bit operation of calls to Kickstart. ❑

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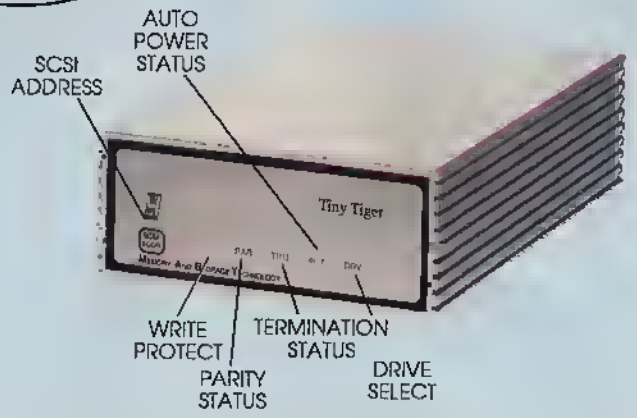

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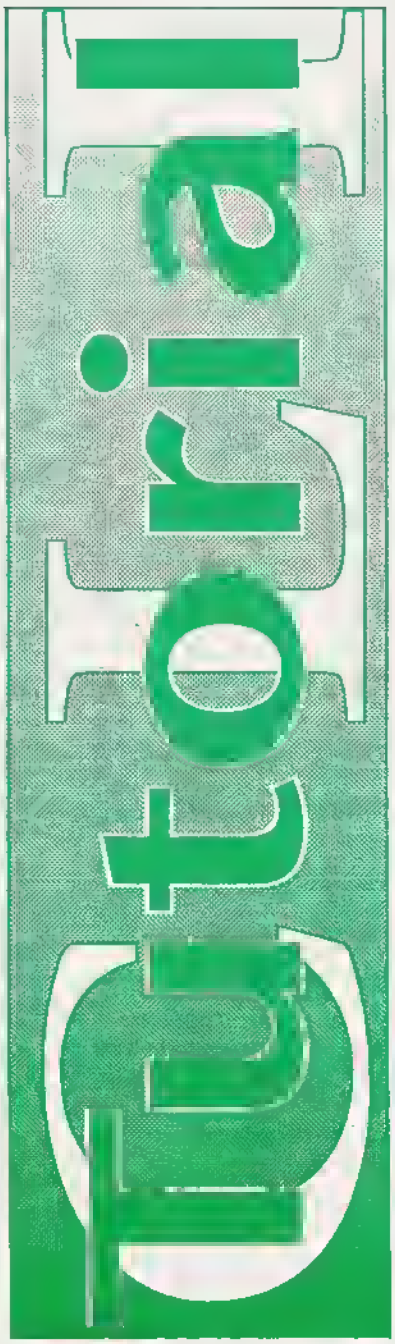

Coming to grips with the Amiga's CLI
A tutorial for beginners
Part 7
by Andrew Leniart

Welcome back to our CLI tutorial. This issue, we will look at a couple of new commands relevant to those lucky enough to own a hard drive. For those that are not so lucky, a bit of a recap of what we've covered so far and if space permits, a couple of answers to readers' queries.

Devices; and what they are

It's all fine and well for people to talk about devices on the Amiga, but what exactly are they? I would hazard a guess that a lot of people would fall into the same trap that I did and consider Amiga devices to consist purely of hardware like a disk drive or monitor. Not so!

The Amiga has other devices built into it. The Parallel port on the Amiga that we hook our Printer up to is a device the Amiga recognizes as is the Serial Port. Then you have software devices such as Con: and before long, things start getting a bit confusing. To try and simplify matters, let's break it up into two parts.

Firstly, the following lists all devices that the Amiga can recognize without any special efforts required from the user.

Df0: Internal disk drive.
Df1: External disk drive.
Prt: Printer.
Par: Parallel port.
Ser: Serial port.
Con: Con: window.
Ram: RAM disk.

That's the basic list as I know of it, though certainly there are other devices such as the A501 memory expansion for the Amiga 500 that do not require any special effort to use. But what is this special effort, and when is it needed?

No big deal really. All it contains is the use of one of two commands. Bin drivers or Mount or both. There are certain requirements for both and I'll briefly discuss these now.

Binddrivers

The command "Bind drivers" is handy among other things to connect additional hardware to your operating system. In other words, make AmigaDOS aware that a piece of hardware or device is there so we can use it. A classic example is Commodore's A590 hard drive. Normally, a hard drive would need to be "mounted" (more on this shortly). In the case of the A590, Commodore have made the setup such that the A590 can take advantage of the Bind drivers command eliminating the need to mount the hardware.

Usage of the command is as simple as including it in your boot disk's start-up-sequence. Note that there is no need to "run" bind drivers as it detaches itself from the CLI automatically. Bind drivers will cause DOS to "bind" in any new device drivers that it finds in the directory SYS:Expansion.

Maunt

Mount does a similar job to bind drivers. In most cases, when you buy any additional hardware for your Amiga, you should get a disk with some software designed to work and drive your hardware. Included in the software should be an entry to include in your boot disk's Mountlist file which lives in the "Devs" directory.

To get an idea of what I'm talking about, open a CLI and "type" the Mountlist file. ie:

<Type sys:devs/mountlist>

You should end up with the file scrolling through in your CLI. As always, hit the space bar to pause it and the backspace key to continue. In this file should be an entry that looks like this.

```
/* Mount a 5.25" disk drive to be
mounted as DF2: */
DF2: Device = trackdisk.device
    Unit   = 2
    Flags  = 1
    Surfaces  = 2
    BlocksPerTrack = 11
    Reserved = 2
    Interleave = 0
    LowCyl = 0  ;  HighCyl = 39
    Buffers = 20
    BufMemType = 3
#
```

This is an example file to mount a 5.25" disk drive which would be referred to as DF2:. It would effectively give you the capabilities to use 5.25" floppy disks with your Amiga. If we had the disk drive, then all we would need do after hooking it up to the computer is to in-

clude in our startup-sequence the line <Mount DF2:> or type it in a CLI after boot up.

What's it all mean?

To explain all the technicalities of the whole entry would require a lot more space than I have available here. It would also be off topic to what I am trying to achieve in this tutorial. I have included it here for the purpose of making you aware that it exists and to give you a general idea of why it's there. In any case, it never hurts to have a sticky nose around every crevice of your disks.

Getting back to basics

It is easy to get carried away when writing a tutorial such as this and forget the users that it was originally aimed at. I was reminded of this fact by a reader that answered my plea for feedback and decided to write in and chastise me with his views on how I'm going.

Vince Schubert of Collombatti writes:

"I just finished reading the September issue of ACAR and am taken to chastise you. Andrew, you are a naughty boy! It seems you are so far into your journey with Amiga that you cannot remember those early days when you took what you read and LITERALLY did what it said. If beginners did that with your last article on CLI then when they came to the disk formatting part they would start hating you.

"For a start, FORMAT resides in the SYSTEM drawer on a standard workbench and not in the "C" directory (only a CLI freak would put it there) and secondly although the RUN command you speak of works fine, a beginner is going to be bewildered by the fact that as soon as you hit return the CLI SEEMS to be taken up with displaying the track that is being worked on. They will not realise that if they simply enter the next command for df1: right on top of the screen activity, that Amiga will then do both but with a slightly confusing display.

"Lastly there is no speed benefit from doing your formatting this way as both drives share resources and work at half speed. There is a benefit of course and that is when you return from getting your cuppa you have two disks ready.

"When writing advice for beginners Andrew, you should either get a beginner to follow your instructions while you watch over their shoulder (with your mouth shut) or you should dig out your original workbench disk and follow your own instructions TO THE LETTER.

"On the positive side Andrew, I like your style and I think you are doing a good job. You have taken on a huge task that would stretch anybody to the limit."

Reply..

PHEW! Boy, when you give some feedback Vince, you certainly don't hold back do you?! Firstly, I am very aware that the FORMAT command lives in the SYSTEM directory on the workbench disk and not in the "C" directory. The fact that I made a mistake in pointing readers to the wrong directory I blame on the position of the moon that night along with the fact that Saturn was in the wrong position while I was writing the article. That's a good enough cop-out I think.

Your comments on readers being confused when trying the double disk format using the "RUN" command are quite true. However, it is impossible to cover and warn readers of every angle in these pages. If I did that, I would need to write a book on every command.

I've always maintained that the best way to learn is with a

continued on p 42

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bit of guidance and a lot of trial and error. I don't agree with you when you say the majority of readers would start hating me when confronted with the problem you mention though. On the contrary, I think they would have been pleased at having learned something new from the experience.

I also do not agree that there is no speed benefit from doing multiple formatting using the run method. When you take into account the time saved in swapping disks and such, I think you would find that there is a considerable time saving.

As for your suggestion of digging out an original copy of my Workbench disk to try my examples to the letter, I think this has merit and will try to do this in the future. Anyway, thank you for taking the time and effort to reply.

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Setting up a ram disk

I had another letter forwarded to me by my editor from a user who seems to be having problems setting up a RAM disk. Unfortunately, due to the fact it was handwritten rather illegibly, I had some problems in deciphering exactly what the man was trying to say. Please try to type your letters or print them so that these difficulties can be eliminated.

A Mr. Wim Groothawgol in Palmerston N.T. writes: "Thank you for your article 'A Tutorial for Beginners' in May's ACAR. I recently bought an Amiga 500 secondhand which according to the previous owner is about one year old. I could not set up the RAM disk I think because of the old version Workbench 1.2 Dos which came with my machine. Could you tell me how I can get hold of a later version of DOS?

"Another problem my Amiga has is if I select "Interlace" to <ON> in Preferences, my workbench screen shrinks to about half height and flickers something terrible. I hope you can help me with both problems. Thank you."

Reply...

Firstly, your problems with setting up a RAM disk do not have anything to do with the version of AmigaDOS that you are using. My guess is that there is a line missing from your disk's "startup-sequence" which you will find in the "S" directory of your Workbench disk. You can check this with the following procedure.

Boot up with your workbench disk and then open up a CLI. Type in the following command.

<Ed DF0:s/startup-sequence>

and hit return. This will take you into the resident workbench text editor "ED" and present you with your startup-sequence file ready to be edited. Using the arrow keys on your keyboard, go down the list and look for a line that should read "DIR RAM:"

If it's not there, create a blank line somewhere in the middle of the file by pressing the RETURN key and type it in. Then save the file by pressing the <Escape key followed by the "x" key on your keyboard> Hit return and re-boot and you should find that a ram disk appears on your workbench screen once the disk has finished re-booting.

The later version of DOS (V1.3) does not need this command and any Commodore software supplier should be able to supply you with a copy of this upgrade for around about $30.00. Well worth getting as there are quite a few enhancements included in this upgrade as well.

The problem you mention of the interlace screen flickering on your workbench when selected on is not unique to your machine. It is also normal for the screen to reduce considerably in size.

The flickering can be fixed by purchasing a piece of hardware which attaches to your machine called a "Flicker Fixer". Enquire about this hardware from your local Commodore dealer and if they can't help you, write in to Prime Artifax advertised in this issue and ask them for help in getting hold of one. I am not too sure about the price, but if you intend to use the Interlace option a fair bit, it will prove to be a very worthwhile investment.

I hope this helps solve your problems. If you need further information, please feel free to write in and ask for more. In any case, for your efforts in writing to us with these queries, you can expect to find a free PD disk from the author in your mail box a few weeks after publication of this issue. Congratulations!

Conclusion

Well, that's about that for this issue. Starting from the next issue, I will be recapping some of the commands we have already covered in the past as well as answering some more readers' queries. We will also be looking at the benefits of using a RAD disk rather than RAM, discussing what it is and how to set one up.

Till then, please continue to send in queries on any particular problems you might be experiencing with your Amiga and / or AmigaDOS. You never know, you might just end up with a FREE PD disk for your troubles.. ❑

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FIND	ILOAD	BLOAD

RENUMBER: *Also modifies all the GOTO's GOSUB's etc. Allows part of a program to be renumbered or displaced.*

PSET *Sets up printer type.*

HARDCAT *Prints out Directory.*

The toolkit commands can be used in your programs.

DISK TOOL

Using Power Cartridge you can load up to 6 times faster from disk.
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MERGE: *two BASIC programs can be merged into one.*

DISK: *With DISK you can send commends directly to your disk.*

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PSET 3 ·	Turns the printing 90 degrees!!
PSET 4 ·	HARDCOPY setting for MPS802/1526.
PSET 8 ·	Bit-image mode.
PSET C ·	Saving Lower/Upper case and sending Control Codes.
PSET T ·	All chereclers are printed in an unmodified state.
PSET U ·	Runs a serial printer and leaves the User-Port available.
PSET Sx ·	Sets the secondary address for HARDCOPY with Serial Bus.
PSET L1 ·	Adds a line-feed, CHR$ (10) after every line.
PSET L0 ·	Switches PSET L1 off.

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BASIC	Return to BASIC.
RESET	Normal RESET.
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RESET ALL	RESET of any program.
TOTAL BACKUP TAPE	As BACKUP DISK but to TAPE.
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Public Domain Software for your C64

by Glenn Bussell

There have always been complaints about the high price of commercial software and I must admit that upwards of $40 is too expensive for at least some of the software available. For this reason some people turn to piracy.

There is another cheap way of collecting programs which has the advantage of being legal. This is Public Domain software. Although public domain software on the Amiga has a reasonably high profile, Commodore 64 public domain software has received little or no publicity. This is a pity because there is some very good software available at even better prices.

If you are one of the many people who are unsure of exactly what Public Domain means, it can be defined as a program that has no copyright and therefore can be distributed freely to anyone, although it may not be sold for financial gain. This is a real bonus because it means that you are free to give it to as many friends as you like without breaking the law.

Cammadare 64 public damain saftware has received little ar na publicity. This is a pity because there is same very goad saftware available at even better prices.

Is it any good?

The more cynical among you may be thinking that no one would give software away if it was any good. This is actually far from the truth. Many program writers write for fun rather than profit or are putting programs in the public domain to test the program with a view to producing a commercial version sometime in the future.

The programs cover just about all aspects of computing. The largest category is of course games. Most of these games, while they will never become classics, are enjoyable enough provided you don't need state of the art graphics and sound to enjoy a game. The games are also a good chance for anyone who is relatively new to computing to catch-up on golden oldies like *Space Invaders* and *Pacman* - the unofficial versions of course.

There is a wide selection of utilities available which include useful programs such as disk and file copiers, programs to help scratch and unscratch files, typing tutors, track and sector editors, and a program to produce a catalogue of all your disks (this is particularly useful if like me, you have more disks than you can easily keep track of.) This is just a small selection of the utilities available because to produce a comprehensive list would take up several pages.

Graphics

Although it may now seem rather difficult to believe, the Commodore 64 was once regarded as THE home computer for graphics and sound. This mantle now of course lies with the Amiga but looking at some of the sound and graphic demos available on public domain disks you can see why. Mind boggling is the best way I can describe them, they seem to push the machine to its limits and beyond.

If you are one of the many people who have bought programs such as *Printshop* or *Newsroom* and have found them to be useful until you had exhausted all the graphics supplied and were unwilling to part with an extra $40 or so for a clip art disk, Public Domain libraries offer several disks of clip art for most popular programs at a fraction of the cost.

I hope after seeing the wide range of programs available in Public Domain software you will have decided to get some. That only leaves one problem, Where? In my experience there have been three main ways to obtain public domain software.

The simplest and cheapest is to find a friend who has some and ask them to copy it for you.

Another way is to log on to a bulletin board which offers public domain software for downloading. This can be impractical if either you don't have access to a modem or live in the country and so incure STD charges.

Cammercial suppliers

That brings us to our final option, buy it from one of the companies who are selling public domain software. You may think this is a contradiction of what I earlier said about Public Domain software not being sold for a profit, but it can be justified by the companies because any profit they make can be accounted for in paying the bills that build up in running such a library.

These companies offer disks usually on themes such as games or utilities for around five dollars a disk. In my opinion the disks are usually very good value for money and the turn around time for orders is usually a week or less. I have included the name and addresses of some Public Domain companies below. If you write to them I'm sure they will be happy to send you the details of what they offer:

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C64 - Sound & Graphics.

More on using high-res grophics

First off this month, here's the bit that some how we managed to leave off the end of last month's column. To save the program from last month as a nice compact machine code file use the following:-

Program: SAVE MC GRAPHICS

```
100 REM SAVE MACHINE CODE GRAPHICS
110 OPEN 4,8,4,"GRAPHICS.BIN,P,W"
120 PRINT#4, CHR$(0);CHR$(192);
130 FOR I=49152 TO 49839
140 PRINT#4, CHR$(PEEK(I));
150 NEXT
160 CLOSE 4
```

Now, once it is on disk, add this linc to your program:

```
IF PEEK(49152)<>96 AND PEEK(49838)<>96 THEN
                    LOAD"GRAPHICS.BIN",8,1
```

The LOAD followed by ",8,1" command loads the programs into the area where it came from. If you don't use the ",1", the C64 assumes it is in BASIC and loads it from the start of the BASIC RAM.

Using grophics routines

The basic idea for this program was developed from a routine by Brad Templeton which was published in a Canadian magazine, *Transactor*, July,1983. Each routine is called by a SYS (SYStem call) to the appropriate location referenced to the start at 49153.

IMPORTANT

Before calling any of these routines you must set:

1. Character pointer register (53272)

and if BANK selection is required

2. BANK selection register (56576) - Defaults to BANK 0

(Take care when using BANK 3 - the program lives in the bottom of this BANK at 49152-49838.)

and if you wish to move the screen

3. Screen pointer register (53272) - Defaults to 1024 above BANK start address.

- For all routines the SYS start location is referenced as SA=49153

ROUTINE COMMAND SYNTAX

Initialise 1 SYS SA, C0,C1,C2,C3

where C0-C3 are the four colours you wish to use. These correspond tothe background colour and the three bit colours respectively. (These correspond to the bit-pairs shown in the previous table.)

This routine calculates the locations of the bit-map RAM and screen RAMfrom the BANK and screen/character registers, then enables multicolourmode and bit-mapped mode, Clears the bit RAM and sets the background register, screen RAM and colour RAM with the four selected colours, and sets the screen page pointer (location 648).

ROUTINE COMMAND SYNTAX

Initialise 2 SYS SA+12,C0,C1,C2,C3

Performs the same as Initialise 1 but does not clear the bit-map RAM.

This allows you to return to a previously drawn high resolution screen and continue to draw over a previous pattern. For example, use a simple statement such as

```
GET A$:IF A$=CHR$(133) THEN SYS SA+12,2,3,4,5
                          ^ "f1" key
```

Important note

Either one of the initialise routines must be called before using the following commands.

ROUTINE COMMAND SYNTAX

SETPOINT SYS SA+3, X, Y, colour number

Sets the bit with the coordinates X and Y according to the colour value set in the Initialises routine. Colour number 0 to 3 refers to colours C0-C3. To turn a bit OFF use colour number 0 - this is the background colour.

ROUTINE COMMAND SYNTAX

PLOT SYS SA+6, X1, Y1, X2, Y2, colour number

Plots a line between the coordinates X1,Y1 and X2,Y2 in the colournumber 0-3 set in the Initialise routine. Again, to "UNPLOT", setv«colour number 0.

Note: Both SETPOINT and PLOT will accept any value for X and Y between 0 and 255. You may also use any variable or mathematical function inplace of X and Y, that is SIN, COS, LOG, A+B*(3^-.3) and so on,provided these generate a value 0-255. Negative values cause a SYNTAX ERROR.

ROUTINE COMMAND SYNTAX

RESTORE TEXT SYS SA+9

Restores the normal text mode. Resets sereen colour to the normal blue [BLU] and resets all the BANK, character and sereen, and screen page pointers to their default values. (BaNk=0; Screen Base=1*16; CharacterBase=4; Screen Page=4.)

IF you are using BANK selection to put the normal text screen RAM andcharacters in other than BANK 0, the section of the RESTORE TEXT routine which resets these pointers may be modified by changing thedefault values. These may be changed by

To Change	Change Location	Normal
BANK Number	POKE 49283,151-BN	151
Character and sereen pointer	POKE 49273,SB*16+CB	20
Background colour	POKE 49278,colour	6

Don't forget Sereen Page if you change the sereen pointer.

Screen Page	POKE 49288,page	4

Demonstrotion Progroms

To see how the program works, two simple demonstration programs and exercises are given below. For the routines to work properly, the BANK, Character, and Screen pointers must be set as in Lines 130-190.

Both programs use the GET statement to check if a key is pressed (anything but the STOP key), and if so, the program jumps to the RESTORE TEXT routine to reset things to normal.

Note: Typing Errors. If you make a typing error and/or the program crashes from any SYNTAX ERROR, you will need to use RUN/STOP and RESTORE to recover the screen. If you have changed the BANK or Screen Pointer then this will not work. For some unknown reason, the RUN/STOP RESTORE key sequence only resets BANK, character and screen pointers. It does not reset the Screen Page pointer In location 648. (An oversight by Commodore?)

You should be able to recover the normal screen by blindly typing POKEv648,4 and pressing RETURN, otherwise the computer will have to be turned off.

Preferably, ensure the listing is accurate before changing any of the BANK or screen pointers.

The first program uses SETPOINT to draw a line from 0,0 - top left,- to159,159 - bottom right. This could be done more effectively with the PLOT routine!. Then it uses the PLOT routine to draw lines between two randomly selected points with the colour randomly changing between all of the four selected in the Initialise 1 routine. It's a sort of "I don't know much about art but I know what I like" program!

```
Program: HRG TEST 1
10 REM  (C) GREG PERRY, BRISBANE, 1984
100 REM  HRG TEST 1
110 IF PEEK (49152)<>96 THEN PRINT "GRAPHICS[SPACE]
M.C.NOT[SPACE]LOADED": STOP
120 REM  LOAD & RUN GRAPHICS DATA FIRST
130 BN=0: REM   BANK NO
140 BK=56576: REM  BANK SELECT REG
150 SB=1*16: REM  SCREEN BASE FROM TABLE
160 S1=SB/4+BN*64: REM  SET SCREEN PAGE
170 CB=8: REM  CHARACTER BASE
180 CP=53272: REM  SC/CH REG
190 POKE 648,S1: POKE BK,151-BN: POKE CP,SB+CB
200 SA=12*4096+1
210 SYS SA,2,3,4,5
220 FOR I=1 TO 159: SYS SA+3,I,I,1: NEXT
230 C=RND (0)*3+1
240 X1=RND (0)*159:Y1=RND (0)*199
250 X2=RND (0)*159:Y2=RND (0)*199
260 SYS SA+6,X1,Y1,X2,Y2,C
270 GET A$: IF A$<>"" THEN 290
280 GOTO 230
290 SYS SA+9
300 END
```

The second draws a three dimensional trigonometric picture using asimple sine function and the PLOT command.

Program: HRG TEST 2
Add or change the following lines.

```
235 X1=80:Y1=100
240 FOR X2=0 TO 159 STEP.5
250 Y2=100+80*SIN(X2/10)
280 NEXT
285 GOTO 230
Dclete Line 220
```

Exercises

For either program

1. Change the selected colours in line 230

2. Change the Initialise 1 routine in line 210 to Initialise 2 by, for example,

```
210 SYS SA+12,2,3,4,5
```

This allows you to return to the previously drawn bit-map.

For program HRG TEST 1 Only

3. Change the PLOT parameters to draw some other pattern. Modify the program to give program HRG TEST 1.2

Change

```
280 X1=X2:Y1=Y2:GOTO 230
```

Delete Line 220

Just change the parameters and see what happens! Ensure that you do not generate an X or Y which is negative or greater then 255.

4. FILL a large block with colour. Simply PLOT all the lines between two points in the required colour. This can be expanded to give some interesting graphics as we can see by the following examples.

Program: HRG TEST 1.3
Change or Add the following lines to Program HRG TEST 1

```
230 C=RND(0)*4
240 FOR X1=50 TO 100:Y1=50
250 X2=X1+50:Y2=Y1+50
275 NEXT
```

After you try this exercise, you will see how easy it is to begin to use simple programming to create exciting graphics. Let's continue the exercise into another dimension.

Program: HRG TEST 1.4
Change or add

```
230 C=2
262 SYS SA,Y1,X1,Y2,X2,1
```

Good? It's even better in three dimensions.

Program: HRG TEST 1.5
Change or add the following lines to Program HRG TEST 1.3

```
240 FOR X1=20 TO 100:Y1=50
264 SYS SA,Y1-2,X2-2,Y2,X1,3
```

For program HRG TEST 2

4. Swap X2 and Y2 in Lines 240 and 250.

5. Select a random value for the X1, Y1 location for the centre of the function. CHANGE Line 235 to use the RND function.

6. Change the trigonometric function in line 250 to COS or TAN etc.

7. See if you can get the program to draw circles in different colours.

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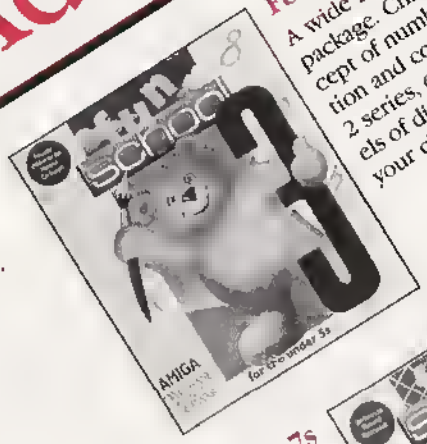

FUN SCHOOL 3 FOR THE OVER 7s

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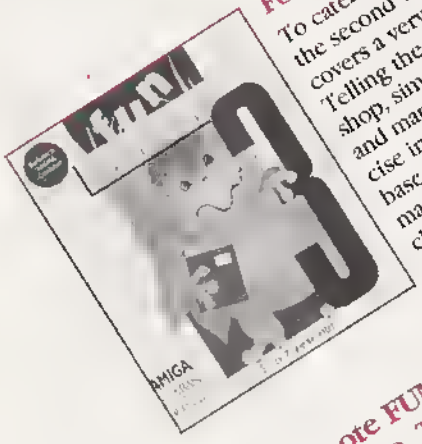

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The C64 Column

by Owen James

Welcome to the first C64 Column of the year. And what an interesting year it will be. This is the time of change for Commodore. By now they should be able to evaluate the degree of sueeess of the new Amiga 3000, and know if 'multi-media' really is the direction that the Amiga needs.

Will the 64 be left in the dust as the Amiga claims the spotlight? Not likely! The gaining of attention for Commodore can only spell good news for the 64. When people start looking at Commodore they'll hopefully look at their entire product line. If Commodore gets support then so does the 64. Simple really.

An interesting idea that I found in the August/September edition of RUN magazine was the suggestion that if computers were hamburgers then Commodore is the McDonald's of the computer business.

Seriously though, the C64 could easily rival the Big Mac. Did you know the 64 was the absolute largest selling individual model computer in the world? Yep! It's official.

A more powerful C64?

This month from the "I'll believe it when I see it" department comes a persistent rumour about a C65. A more powerful 64? Don't go hocking your 64 for a new model just yet, though, because the word from around the traps is that Commodore have already stopped the development. Wise move, I say, seeing Commodore aren't all that good at giving support to the computers they already have.

One magazine suggested the C65 technology could be sold to Atari so that they could release it as the ultimate home computer. Who knows, it'd probably do better than their ST models!

I feel really sorry for Atari ST users. They walk into a computer shop and have TWO programs to choose from (and that's from an Atari specialist!). Maybe ST users should 'upgrade' by trading in their expensive doorstops for a more useful C64!

Program protection

Program protection seems to be a popular issue these days. Everyone wants to keep their original programs from prying eyes sooner than share their code with others (and who can spell 'selfish'?). Anyway, below I've provided some of the most often used protection routines and techniques, along with a few unusual ones that I come across from time to time. Thank you to those readers who have contributed to this topic by sending in their own pokes and techniques.

Let's start with a few simple pokes. Some of these you may have seen in previous columns but they are still mentioned here for the sake of convenience.

These ones are courtesy of Kenton Clyde:

POKE	EFFECT
774,131:775,164	Disables LIST
774,226:775,252	List gives cold start
775,168	Disables LIST
778,52:808,239	Disables STOP
778,49:808,237	Enables STOP
792,193	Disables RESTORE
792,71	Enables RESTORE
808,127	Disables RUN
808,234	Disables STOP/RESTORE/LIST
808,225	Disables STOP/RESTORE
808,239	Disables STOP (RESTORE OK)
818,131:819,164	Disables SAVE
818,226:819,252	SAVE gives cold start

Chris Nilsson, who provided a number of protection pokes for last month's column, has also been kind enough to offer us a technique that hides a 64 program from listing as well as disabling the STOP/RESTORE keys. He warns that this method is PERMANENT. Make sure you have a backup copy before protecting it.

Your program can't use lines 0, 1, or 2. To protect it, use the following four steps:

1) Add this special line 2 to the program:
2 POKE 43, PEEK(2049):POKE 44, PEEK(2050):POKE 808,234
2) Replace all ENDs and exit points with:
POKE 43,1:POKE 44,8:POKE 808, 237
3) Add this line:
1 REM ""[cursor left, insert 20, delete 10, space 10, cursor right]NO FAIR PEEKING![shift L]
4) Type this:
POKE 2051, 255:POKE 2052, 255[return]

The insert 20, delete 10 etc talked about refers to key presses. For example in step three, after the quote marks, you'd press the cursor left key, press the insert key (shift/delete) twenty times etc.

These techniques all work fine, however none of them stop a user from resetting the 64 and UN-NEWing the program for listing. There is a solution that will stop the paperclip resetters and some of the cartridges.

You see, even though the reset routine is stored on ROM the 64 checks a certain memory location before resetting to check if a cartridge is installed (in which case control would go to the cartridge port). We, being the clever little users that we are, can fool the 64 into believing a cartridge is attached.

I'm told that the 64 checks from location $8002 onwards for the ASCII string 'CBM80'. If it finds these letters it will go straight to a routine whose address is held in 32768 and 32769. Sound confusing? Simply put, just poke 'CBM80' into $8002 onwards, write a small routine, and put the address of this routine in 32768 and 32769. I'll tell you about a suitable routine later in the article. This method may be a long way from foolproof and perfect, but at least it's something.

Some would say that Freeze cartridges pose a bigger problem to program security than reset buttons. At the simple press of a button anyone can have a copy of your program. Well, I have some good news.

These cartridges aren't as invincible as manufacturers

continued on p54

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would like to make out. I'm told that when the freeze occurs from certain cartridges, location $0103 changes. To make use of this you'll need an ML program that checks this address, and then does something about a security violation.

I'll be including a suitable routine to take care of all that stuff for you on this C64 user software disk that I've been raving about over the past few months. To get this disk going I need YOUR support. I want your own home grown software for inclusion. Send me a disk, tape, or listing of your program. It's not just professional quality software that I'm after - I want the simple software that does its job and works well. Whatever type it is, a utility, productivity, or just a demonstration, I want it!

Well, all of the above would be useless if you had an exit option in your program that only used the END command. What we need is something that would clear every trace of your program from memory and then reset the 64. Here's a routine that does just that:

```
10 FOR X=828 TO 857
20 READ A
30 B=B+A
40 POKE X,A
50 NEXT X
60 IF B<>5354 THEN PRINT "DATA ERROR":END
80 SYS 828
90 DATA 169, 0, 133, 251, 169, 8, 133, 252
100 DATA 169, 0, 168, 145, 251, 200, 196, 251
110 DATA 208, 249, 230, 252, 169, 250, 197, 252
120 DATA 208, 238, 32, 226, 252, 96
```

This routine will clear all RAM and then reset the 64. Just adapt it as a subroutine to your BASIC program. If you're an interested machine language programmer then write to me with a stamped self-addressed envelope and I'll send you back the assembly language source code.

Much of the above is not real useful unless your program is self-running, otherwise a nosy hacker could list your program before it runs and have a field day on not only your program, but on MY SECURITY ROUTINES ALSO! So how do we go about making a program self-running?

Well, there are a few ways you can try. If you own a freeze cartridge (and haven't implemented my Anti-Freeze technique) then you could set the program in motion, freeze it, and then save it on disk. Of course this is only a very quick and very simple way of doing it.

Another way would be to link it to another program. To do this you need to write another short program that will disable the RUN/STOP keys and whatever else, POKE a value somewhere in memory as a later check, and then load the main program. The only thing is protecting this first routine. We could just use the routine that Chris Nilsson was so very kind to share with us. Since it's such a small routine it shouldn't need a great deal more protection.

The only other thing is loading a program from within another program. This has been a mystery to many programmers for a great deal of time. There are various ways of performing such a feat, but I've found the most simple way is to directly call the Kernal ROM routine. Try this:

```
POKE 147,0:SYS57812"program name",8,1
SYS 62631
```

Here's a complete routine to load the program:

```
10 POKE 50000, 111 : REM CHECK FOR CHEATS
20 POKE 147,0:SYS 57812"main",8,1
30 SYS 62631
40 RUN
```

Line 10 simply pokes a value in a memory location. One of the first lines of our main routine will PEEK this location and check that the number 111 is there. In other words, if a clever user tries to load the main routine directly, it won't continue or better still will go to my exit routine above.

Line 20 and 30 are simply the load routines and line 40 will run the program for us. The main program should also be protected by Chris' method, just in case!

This method is a little bit fiddly, but it works. If you want an actual 'boot maker' program that will take a file name and create a self-running version automatically then you'll just have to wait until the user compilation disk is out. I'll include one of the best boot making utilities around (of course it's the best - it's written by yours truly!)

Anti-pirate

Now how about stopping pirates from making unauthorised duplicates of your beloved program? I recommend you get a program by the name of *Kwik Utility*. For under $20.00 this program will work wonders.

The main feature of *Kwik Utility* that we want to know about is generating disk errors. Yes, you heard me right! If we generate errors on certain tracks that are unused by our program we can probably stop those simple copiers from duplicating our disk. Our program can also try to read a sector that we know should be bad. If we don't get an error when we try to read this sector then we know the program isn't on the disk that it should be (i.e someone, being defeated trying to use a complete disk copier, has tried to copy just the files).

If the program at some stage doesn't pass one of these security checks then it can take appropriate action such as running through my exit routine mentioned earlier.

Now you're set. You have my freeze frame check installed, you have various keys (eg RUN/STOP) disabled, you're protected against reset, the program is auto running, and spare sectors of the disk are riddled with errors. What else do you need? Well, says Chris Nilsson, you could always 'bash' the directory. And a program he's submitted for the user software compilation disk will do just that. A potential hacker or pirate will try to read your directory to find out what files need to be copied but won't be able to.

I think that if you put all these routines to work at the same time you could find that your program is more protected than Fort Knox, let alone professional commercial software.

Tips and tricks

I'm rapidly running out of space, so here's a few quickies:

To reduce 'head bump' on the 1541 try this:

```
OPEN 15, 8, 15
PRINT#15,"M-W"CHR$(106)CHR$(0)CHR$(1)CHR$(129)
CLOSE 15
```

This method might conflict with some protection methods, but for general use it should work fine. Using this tip will reduce the need for realignment.

Kenton Clyde has some more pokes for us. Here goes:

POKE	EFFECT
53265,11	Turns off screen (computer runs faster).
53265,27	Turns on screen
53272,21	Switches to GRAPHICS mode.
53272,23	Switches to LOWER case mode.
657,128	Disables SHIFT/COMMODORE keys
657,0	Enables SHIFT/COMMODORE keys

Kenton has also included some ROM routines which do some interesting things.

HEX$	DECIMAL	EFFECT
$E544	58692	Clears the screen
$E8EA	59626	Scrolls screen up one row
$E981	59777	Scrolls screen down one row
	(Poke 677, no. of rows to scroll down)	
$E9FF	59903	Clears entire row
	(eg. POKE 781, X : SYS 59903)	
$FE66	65126	WARM START
$FCE2	64738	COLD START

Also PRINT PEEK(152) to discover how many files are still open. SYS 65511 will close all files that are left open.

That'll have to do for this installment. I have a host of interesting stuff for you over this year, including graphics, mice, printers, and the usual swag of tips, tricks and anything else that happens to land my way. Hold onto your seats, and I'll be back next month. Remember to keep your tips, tricks, news, and views rolling to me care of:

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Vocabulary Impravement Tutor

by Anne Glover

How many of the following scrambled words can you decipher? **IEBI-ASTLZ** (to keep from changing) or **RHISNOU** (to feed) or **BELRAEIRPAR** (cannot be mended or put right)? These are some of the strange looking "words" you may encounter while exercising your language skills in this software version of a "vocab" teacher.

Vocabulary Improvement Tutor (VIT) is designed to be used by adults or teenagers. Although you will not have your teenagers fighting to use it, it will improve the "vocab" of those people who are already motivated.

VIT has 720 words in alphabetical blocks. The words are "high level words" taken from newspapers and magazines. After selecting a block (e.g. A-Bo') the player is presented with:

1. **a meaning** of the word e.g. "to waste away".

2. **a sentence** into which the word could be placed e.g. "illness caused her body to ( )".

3. **the scrambled word** is presented and vocalised e.g. OYHIRTPA.

The player is then given 30 seconds to type in the correct answer.

If you are having trouble, the HELP button can be pressed and the word will be rescrambled e.g. THOYPAR. This procedure didn't seem to help me much, but you can keep on asking for help and the word will slowly unscramble. Any letters that happen to be in the correct place will remain there with each rescrambling e.g. YOHAPTR. If you type in the correct word within the 30 second limit (ATROPHY) you will be rewarded (if you wish) with a simple target game.

Ten words each make up a game when points are tallied. Up to four players can compete in any game. After completion of a game a new block of words can be selected. There are 18 alphabetical blocks to choose from. Repeating a block on your own will not bring up the same words. Only after a few repetitions will each word reappear.

VIT is a bit dry and dusty. New words cannot be added to extend its usefulness. Blocks are always in alphabetical lumps. This means you will always have a good idea of the first letter in the word. Blocks of mixed words cannot be selected. If one letter of an answer is incorrect, the word is wrong (which it is), but there is no encouragement to try again nor any facility to indicate that you were almost right. A person's "vocab" may be improving but there will be no recognition of this fact; nor any reward if their spelling skills are not keeping up with their "vocab" development. VIT may familiarise the novice with the keyboard, it will certainly improve their spelling and "vocab" will be extended to some degree.

People who have a non-English speaking background will gain from this program. It may have a role for classroom or college usage as well as in the home. The cynic in me must question whether the main skill being developed is simply the ability to decipher scrambled words. Does this necessarily result in an improved and workable "vocab"?

VIT incorporates a voice that pronounces the correct words and also its scrambled words.

As for the answers to the scrambled words at the beginning of this article, they were in turn, Stabilise, Nourish and Irreparable.

Conclusion: Useful for adults or teenagers who are already motivated to improve some of their language skills.

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Shareware, the Pros and Cons

by Andrew Leniart

Open minded software authors unwilling to risk dealing with a giant software publisher are using the label 'shareware' to gain distribution and receive return for their work. Shareware programs are freely distributable. If you like what you see, you are then encouraged to send in an amount to the author in return for additional support and upgrades.

I decided to write a piece on this topic as there has been a lot of talk on Bulletin Board System message areas about it. I get the impression from this talk that there are a lot of confused and understandably disgruntled people out there.

Problems

It appears that quite a few people have been, for want of a better term, stung, because they have sent in shareware donations and received nothing back. A good example is a heated debate that is currently going on in Aust-Amiga at the time of writing regarding the ShareWare comms program *Jrcomm* by Jack Radigan.

Dozens of people claim to have sent in the suggested ShareWare fee and claim that they have not received their copy of *Jrcomm V1.0*. Talk is going around with people saying that Jack Radigan is holding off sending out registered users their software because he is currently working on an update to V1.0 to fix some bugs.

Many refuse to believe this and are convinced that they have seen the last of their hard earned cash. Users that claim to be Beta-Testers of the software are desperately trying to reassure people that all is OK and that they will soon get the disk which they paid for. But even if that is the case, is it really acceptable?

The problem as I see it lies mainly with the fact that Mr Radigan cannot seem to find the time to answer the simplest of enquiries. People have sent him Net-Mail through the Fidonet channels and have not had a reply.

Others have sent letters to the USA to make enquiries and these too, according to what is being said in the echo, remain unanswered. In my own humble opinion, Mr Radigan in acting this way is destroying his chances of getting further people to register with his product and is in fact encouraging people not to send in the money he asks for the product. To me, this is truly a great shame.

Why shareware?

The Shareware concept is one which is dear to my heart and I'm sure many others as well. As I am not a programmer, I don't stand to make any money out of the concept myself, but I enjoy the opportunity to *try before I buy* immensely and for that reason alone, I would like to see it prosper and grow.

How many times have you laid out big bucks for a program that you thought would meet your needs, only to be disappointed when you had it home and used it for a few weeks? How many of you have spent from $30.00 to $80.00 of your hard earned cash on a commercial game which got super reviews in your favourite magazine and were grossly disappointed with it for one reason or another? My guess is that there are a lot of hands showing out there in 'reader land'.

Shareware software alleviates these problems completely. There are many benefits that come with the ShareWare concept, a few of which I'll try to cover a little later. Note that these are my own opinions and you may or may not agree with me, but by the end of this article, I hope to stimulate enough interest from everyone to perhaps get a bit of a debate and discussion on the subject going.

Commercial softwore

If you go out and buy a commercial program and then find that it does not meet your needs or is not to your liking, what can you do about it? Unless you deal with a particularly sympathetic software reseller, your chances of getting a refund or an exchange of the software are very slim indeed. Most software resellers work on the rule that there are no refunds or exchanges with software so you're ultimately stuck with it.

You could write to the company which holds the copyright to the program and tell them the features you don't like, but unless a lot of people write in with the same complaint, it is highly unlikely any changes you'd like to see would be implemented in future updates or releases.

On the other hand, you could always stick an ad in the paper and try to get some other sucker to take this lemon off your hands. But by the time you count up the price of the ad, the time you've lost and an amount off the retail price you paid, you're lucky to end up with 75% of your money back. And that's assuming that you sell it first try! It could take months before you find a buyer.

Solutions

So what's the solution and how do you prevent yourself from falling into this predicament? I suppose one could be to get hold of a cracked or pirate copy, which sells for little more than the price of the disk, and try the program first to see if it meets your needs. But not only is this practice immoral, it is also under Australian copyright laws, highly illegal.

A better solution would be to insist on trying the software in the store before you buy it. Problem with that is there are not many stores which allow you to sit at a computer and use the program for a couple of hours in order to try it. Sad, but in my experience, very true!

And who has that much time to spare just visiting stores and trying software? Also if everyone did it, computer shops would need to be the size of a large Myers store to accommodate all the computers they would need to have on hand. I admit the last remark is a bit exaggerated, but you can see the point I'm trying to put across.

There is one solution which I think is feasible and would work for most people, and that's for commercial software companies to release demos of their programs! We see a very small number of these filter through every now and then, but ONLY a very small number.

You know, it's both an ironic and crazy fact of life when you can find a pirated copy of a program with more ease and less effort than you can a disabled demo that you could try out. Why the software houses do not release more demos of their software is beyond me.

Surely it would not be too hard to remove a couple of routines of code from a program which disable the 'save' or some other feature of it but allow a user to see the program's capabilities and get a feel for it. We know it's possible - as I said before, some companies have already done it!

One local product which comes to

mind is *Audio Engineer*. I have seen the demo of this program on just about every BBS I have rung to date. We see a few game demo's on magazine cover disks from the USA and these are a top idea! These disabled versions of programs fly through the traps like wild fire.

Public Domain distributors get hold of them and put them in their catalogues for people to try. Users get them and upload them to bulletin boards where others download them and upload them to others and the circle keeps going and going and going!

Both the users and the companies benefit as far as I can see. The user gets a try of the program for little expense while the software company gets among other things, free advertising! Everyone wins.

Shareware software

All of the above and more IS happening extensively, but not so much in the Commercial Software arena. It's called ShareWare and how it works is like this.

You have hundreds, probably thousands of budding programmers, most of which are computer enthusiasts programming all types of software ranging from simple games and puzzles, to fully fledged productivity packages. They do this and then release their work to public scrutiny usually through Public Domain outlets and distributors like the well known "Fred Fish" in America. Most times, the programs released are fully functional with no disabled features of any sort and come complete with comprehensive documentation.

They ask you to try their program and see if you like it. If you don't like what you see, they ask nothing of you. Well... Some might ask that you write to them and tell them why you didn't like it or perhaps report bugs you found so that they might improve it, but certainly this in never a mandatory obligation.

On the other hand, if you like the program and find yourself using it regularly, they put a moral obligation on you to send them a donation to register yourself as a user of their software and support development.

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Disk Magazine Five $10
Utilities for using Newsroom on an MPS 802 plus writing signs, printing Doodle and Printshop pictures. Centronics driver.

Disk Magazine Six $12
Games: Bert the Bug, Hangman. Demos: Space Harrier, Max Headroom, etc. Home Inventory . Graphics, Utilities. And more

Disk Magazine Seven $12
Anti-Isepic, Sledgehammer, Fast Format, Renumber, etc. For 128: Bootmaker 128/64 Utility, Convert Basics utility.

Disk Magazine Eight $12
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To: Australian Commodore Review, 21 Darley Rd, Randwick, NSW 2031. (02) 398 5111.
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More times than not, the amount of the donation asked is left to the user's discretion, however when an amount is suggested, it usually ranges between $15.00 and $25.00. This normally gets you a copy of the latest version of the program, user support and any extras that are being offered only to registered users. Not to mention the smug feeling of having done the right thing and being a registered user.

Good support

Now the benefits in this type of set up for the user are fantastic. No more hoping that what you get is what you paid for. There can't be because you've been using the product before you decided to pay for it. User support is generally very good.

For instance, I registered with the text editor *Qed* by Darren M. Greenwald and later wrote the author to ask if there would be any chance of having a spelling checker coded into the program. I explained that it was a feature the program lacked for me and suggested that perhaps another version of *Qed* which leant more towards word processing could be released for those that used the editor for that purpose.

A couple of weeks after I wrote, I received in the mail Darren's reply thanking me for my comments and suggestions. I was also told that he would be implementing my idea in a future version of *Qed,* while in the meantime he gave me suggestions as to how I could get around the problem with the current version of *Qed* I had. Magic! And all this for $25.00 US. Try writing to most commercial software developers with a problem like this and see if you get the same type of prompt service.

Sadly, life is not always so perfect on the Shareware side of the fence . I can tell you of an experience I am having with the author of the *SID* Directory Utility Tim Martin. I sent in the required registration fee for *SID* at the same time I registered with *Qed* and, at the time of writing, have only received one flier from the author telling me that V2.0 is currently being Beta Tested and will be ready for release in about a month.

Well, it's been four or five months now and still no version 2.0. I have written to Tim to ask what the hold up is and he has not bothered to reply. Sighhhh... This type of behavior puts people off supporting shareware products.

By the same token though, users, by not doing the right thing by these authors and not paying for a product they enjoy and use, will ultimately put shareware authors off releasing good software into the public domain where we can readily get hold of it! It's a vicious circle and one which has to work on a code of honour and a sense of fair play on both the programmers' and the users' side.

So how can we promote this type of behavior between both parties and make the shareware concept grow and become even more successful than it is? I don't profess to have all the answers, but surely a good start would be to just do the right thing by these programmers and pay for something if you intend to use it! If any shareware authors are reading this, then it's up to you to deliver what you promise when you get your donation. These points are just common sense and at least somewhere to start.

If the majority of people started and continued doing the right thing, think of the benefits that would result. More programmers would enter into the Shareware arena, which would result in more quality programs becoming available.

Software houses could start to lose sales and would be forced into competing with shareware authors both with prices and also by releasing demos of their programs so that people could try them before they buy them. Healthy competition reduces prices on any product, so we could even see the price of commercial software start to come down.

In conclusion

You may be reading this and thinking that I'm speaking in a bit of a dream world or on the other hand, you might even agree with some of the points I've made. Either way, I'd love to hear your opinions and see some discussion and new ideas being thrown into the ring on this topic. Take a few minutes or even an hour or two to put your thoughts down on paper and send them in to the magazine. Every little bit helps and your input certainly can't hurt, so do it now. We have to start somewhere, so why not here?

Editor's Comment:

It should be noted that technically the author is not obligated to fulfil any immediate upgrade offers or provide additional support, as an upgrade and hand holding are merely a privilege, not a right. Imagine if the automobile industry offered upgrades at a similar low proportionate cost of the original package. How did you go last time you had a mechanical problem? Did you ring Ford and talk to their customer support department to find out how it could be fixed? No, you probably paid $45 an hour for a mechanic to check it out! All this for an investment of many thousands of dollars.

Consider your shareware contribution fair payment for the program you already have rather than the one you hope you might get and you're still on a good deal. However, ethically speaking, Shareware authors do say you can expect more.

By selling direct the authors accept the fact that whilst their program may not have as strong a profile as a commercial product it might still sell well on the basis that people know they can expect good support by dealing direct with the author. This privilege, which is extended to those who return their contribution, is one which both the user and author need to respect.

There would be little point in a programmer releasing the next version of a product simply because now is the time when he said it would be out, if it still fell short in some vital areas. On the other hand, the author could barely afford to continue to regularly contact hundreds of registered users every time a new release - a privilege - is running late. Remember, you still have the original program. It works fine. The bugs were there when you decided to register. If you buy a car and discover it doesn't perform as expected, you would have no recourse to the manufacturer. Why do we expect so much from software designers?

Shareware is a wonderful way of trying before you buy. However the contribution is for what you already have and for the author extending additional privileges NOT rights to you later on for the purpose of improving his good name and getting more people to contribute. Failing to extend these services may naturally diminish the number of people who contribute. However, if the package is good enough, it may not too!

USER Group Update

Amigo and Commodore 64/128 users around Australia have benefited from a large number of user groups and associations which provide invaluable support. They are also a fine source of public domain software, free advice and problem solving. The following is an update compiled by Tim Strachan. If you have not done so within the past three months, please send us your group details or Fax them to (02) 816 4714.

NSW

COMMODORE HORNSBY
USER GROUP (C.H.U.G. INC)
PO Box 157B,
Hornsby Northgate, NSW 2077.
Contact: Frank Burton (02) 4B71062
2nd & 4th Wed. of each month at St Leo's College, at 7.30pm.

EASTERN SUBURBS USER GROUP
Contact: John Campbell
(02) 779666 or
Jim Merchant (02) 539729
Address: 5 Opal Place,
Padstow NSW 2211.
Meet every 2nd Monday.

TUGGERAH LAKES
COMMODORE USERS GROUP
Chris Dunbar, the customer support gentleman at Commodore, is the secretary of this group, which meets twice a month, has a membership of 120, and averages about 45 at a meeting. They have a club magazine called R.A.M. and seem to have a lot of fun. The details:
Venue: The old Wyong Primary School opp. Wyong Plaza
First & third Thursdays of each month
7 - 9.30 pm
Contact:Barry Atkinson (043) 2B2B05
Chris Dunbar (043) 417570

RAAF WILLIAMTOWN
COMPUTER CLUB
C/- Cpl Warren Inman
RAAF Base, Williamtown 2314.

SYDCOM
Address: 64 Victoria Road
Contact1: Ian Langton
Drummoyne NSW 2047
Phone: 02 B1 2BB0
Contact2: Omar Davids
Phone2: 02 7B7 2932
2nd Friday each month
except Jan, 7.30 p.m

COMPU-TECH COMPUTER CLUB
Address: 15 Hazleton Grove Gateshead NSW 2290
Contact1: Mark Beljaars
Phone: 042 2BB 5B0
Contact2: Ian McDonald
Phone2: 049 49 7256
4th Tuesday of each month, 7 p.m.

ALBURY/WODONGA
USER GROUP
Address: 55B Greyfern Court Lavington NSW 2641
Contact1: David Willis
Phone: 060 254 757
Contact2: Gerry Blom
Phone2: 060 215 227
1st Monday of the month Feb - Dec

VICTORIA

COMMODORE USER GROUP (VIC)
Address: P O Box 6
Abbotsford VIC 3067
Write for details

MELBOURNE COMPUTER
CLUB INC.
Address: P O Box 177
Box Hill VIC 312B
Contact1: Chris Franks
Phone: 03 75B 5529
Contact2: Harold O'Brien
Phone2: 03 B4B 2664
3rd Wednesday each month

COMMODORE USER'S GROUP VIC
Address: 329 Springfield Rd
Nunawading VIC 3131
4th Thursday, monthly

YARRA VALLEY USER GROUP
Address: P O Box 176
Lilydale VIC 3140
Contact1: J. Hill
Phone: 03 728 3635
1st Tuesday every month 8 p.m.

KNOXCOM INCORPORATED
Address: P O Box 2000
Ferntree Gully VIC 3156
2nd Thursday of every month at B.00 p.m.

DINGLEY COMMODORE
USER GROUP
Address: Dingley Community Centre
Marcus Road
Dingley VIC 3172
Contact1: Gerry Skipper
Phone: 03 551 5262
Contact2: Steve Hudson
Phone2: 03 551 5392
2nd Monday each month

STEWELL COMMODORE
USERS GROUP
Address: P O Box 299
Stawell VIC 33B0
Contact1: Ellen Colbert
Phone: 053 582 B33
Contact2: Greg Dryburgh
Phone2: 053 5B2 777
2nd Wednesday &
4th Thursday each month

BORDER DISTRICT USER GROUP
Address: 2 Hague Rd
Wodonga VIC 3690
Contact1: Phil Harvey
Phone: 060 245 190
Contact2: Howie Van Der Vord
Phone2: 060 21B 054
3rd Monday each month at 7.00 p.m.

continued on page 64

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Most orders are processed within 24 hours of receipt. You will not be charged if you're paying by credit card until the goods have been dispatched. Orders are sent by surface mail - however, we do have a range of courier services available if you need speedier delivery.

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TextPLUS, AmigaFox, Calendar Label Print, PrintStudio Lila, GwPrint and Outliner.

Latest Demos

Hinch 1MB $5.50
See the amazing Hinch move in time to the beat. Control his actions. All Australian.

Vizard 1MB $5.50
In the same style as Hinch, now you can make Vizard do his thing. Great animation, digitised frame grabs and sounds.

Support

If you have a more obscure problem, write down the error or problem and call for advice. It is best if you can also have the disk or program ready at your computer as this can help us help you quicker. Please use our Support number on (02) 879 7455.

What if it doesn't work?

If for some reason, the disk you buy is damaged - just return it for a free replacement. Please include a short note explaining the problem which occurred and your correct return address, and day time phone number.

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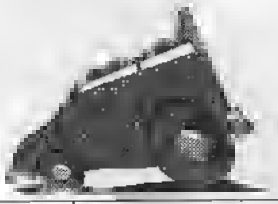

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Amiga Live # 5

3 Disk Set
$24.95

3DTicTacToe
A three-dimensional "four-in-a-row" version of TicTacToe, human against computer.

Password
A program which enhances your computers security by making it complicated enough that users without your password will get discouraged trying to boot and use your system. This should keep out most casual or nontechnical users. Update to version on disk #243.

PUZZ
Very nice implementation of the sliding-block-puzzle concept. Good graphics and the ability to create your own puzzles using an IFF ILBM file and a text file. Includes source and several sample puzzles.

Pipeline
A game like the commercial game 'Pipe Dream' (Pipe Mania). Needs a joystick and PAL display. High scores are saved to disk.

Blob
Another screen hack. Makes red drops of slime flow down your screen.

Berserker
A virus killer which checks for certain conditions indicating possible virus infection. Different from other programs of this kind, Berserker does not rely on checksums only, it will also check the possible virus behind the altered checksum. Therefore even new viruses with old infection methods can be traced and resident tools are not touched.

Stitchery
This shareware program loads in IFF images and creates charted patterns from them for use in counted cross-stitch and other forms of needlework. It requires one megabyte of memory to run, and works best with a good high-resolution printer for printing the patterns. Stitchery was written with The Director and the Projector is included.

SAS Tools
Various submissions from "Sick Amiga Soft". Includes some virus tools, some screen hacks, some small games, and miscellaneous utilities.

Emporos
You are living on the island of Emporos, where several countries exist. Your goal is to make one of these countries your own. There is only one way to do this, and you have to find out.

KeyMenu
Allows fast, easy access to pull-down menus from the keyboard without having to remember all the special amiga key sequences.

SunMaze
The 3d maze demo from disk 171, now expanded with shadows in the corridors to give more sense of direction.

Cursor
A 3-pass BASIC Compiler for BASIC programs written in AmigaBASIC, does not yet support all of the BASIC commands but is able to compile itself.

SnowFall
Another program in the long tradition of screen hacks for the Amiga. Watch the snow fall, get blown around by the wind, and collect in realistic heaps.

Imperium
A four player strategy game based on gaining control of Europe that you either play against three friends or three computer controlled players.

Converter
Graphics conversion between various formats including Atari-ST formats.

Music Box
Background sample player.

Plus some of the latest demos to amaze you! Including female juggler.

D.T.V. & Graphics 2

$8.95

Surf
Generates bezier surfaces of revolution. Will produce some amazing pictures of wineglasses, doorknobs, or other objects one could turn on a lathe. Includes the capacity to map IFF image files onto any surface that it can draw.

Demon
This program implements the Demons cellular automaton as described in the August, 1989 issue of Scientific American. Using extremely simple rules it exhibits rather complex behaviour.

TitleGen
A simple script language program for generating vertically crawling title sequences in any font and up to 500 lines long. Good for video production.

What Is Public Domain Software?

Public Domain software is one of the best resources for affordable programs for the Amiga. From games and graphics, to business programs and utilities, there is a huge range available. These programs have been made available for free distribution. All you pay for is the duplicating, postage and handling. The software is FREE. In some instances, we have compiled programs released into the public domain of a similar theme. We charge a little more for these disks to cover the time involved in collecting, testing and organising these disks. Programs on our theme disks come with our promise of *support* should you need it.

A few of the programs in this collection are *Shareware* - that is, if you like the program, you are encouraged to make a contribution to the author to help pay for future versions and its appreciation for the software itself.

We are always on the look out for contributions to our public domain library. If you have a disk of good public domain programs that are missing from our collection, send it in with a request for any disk from our collection in return. We'll do a straight swap.

SceneGenDemo
Demo of a program called Scene Generator, that generates very realistic looking landscapes. This program is an enhanced, low cost commercial version, of the Scenery program included on disk 155.

ImageLab
A program which performs image processing on IFF pictures. Includes standard image processing functions such as convolution, averaging, smoothing, enhancement, histograms, FFT's, etc. Also includes file conversion functions, a clipboard, and other useful functions.

Hacker 1

$8.95

SampleScanner
By-passes the Amiga-Dos file system and scans a disk directly, block by block, for sound samples. Allows you to "hear" the disk as it is being scanned. If a sample is found, it can be saved to disk for editing, direct use, etc. Author: Steven Lagerweij

FileMaster
A file editor like NewZap or FedUp, which allows you to manipulate bytes of a file. You may also change the file size or execute a patch.

ScanIFF
Scans through an IFF file, identifying the elements. Faster than standard utility IFFCheck since it uses Seek, but does not do IFFCheck's detailed format checking. Intended for use as a "template" from which programmers can code their specific application. For example, an expanded version has been used to extract instrument data from music files.

Kryptor
A small, simple and comfortable file encoder/decoder.

Selector
A program that helps you assemble programs on a boot disk and start them in a user friendly way.

BootBlocks
Detailed documentation on what a boot block is and how it works, along with some sample boot blocks and a program to install a custom boot block. Includes source for the sample bootblocks and the install program.

BBChampion
This is BootBlockChampionII, a very nicely done program that allows you to load, save, and analyze any bootblock. This is version 3.21, an update to version 3.1 on disk 244.

PowerPacker
A shareware command and data cruncher, with a full intuition user interface. Executable files which are crunched are automatically decrunched upon execution, thus saving precious disk space on systems without hard disks.

BootIntro
This program creates a small intro on the bootblock of any disk, which will appear after you insert the disk for booting. This is the "next generation" BootIntro, a more colourful version than the one on disk 244, but the text must be shorter. The first line can be up to 24 characters. The second and third lines can be up to 22 characters. The scrolling text can be up to 98 characters. This is "next generation version 1.1".

Word Processing

$8.95

TextPlus
A word processor for the Amiga, with both German and English versions. TextPlus enables you to write letters, books, programs etc. in a very easy and comfortable way.

AmigaFox
A text processor with graphics capabilities.

'Liner
'Liner is a freely distributable outliner. It can be used to create outlines of any length, in a number of different formats, and can save the outlines as straight text for export to other programs.

SuperRetLab
Prints return address labels 3-up on single-wide 3.5 inch by 7/16/ inch label stock. Can print up to 5 lines per label.

GwPrint
An intuition-based text file print utility. Offers a wide selection of adjustable features for controlling pagination, headers, trailers, margins, date and page-numbering and various print styles/sizes.

PrintStudio
Very nice intuition-based general purpose print utility that prints text with a variety of options. Prints several graphic formats with yet more options. Print any part of a picture, print screens and windows, save screens and windows as IFF files, modify color palettes, change printing parameters and lots more!

Business 1

$8.95

HP11
Emulates an HP11C calculator including the program mode. Features an ON/OFF button that turns the calculator into an icon that will sit and wait until you need it again.

Calc
A very nicely done scientific / programmer/ plotter calculator. The scientific portion has most of the operations found on the more popular handhelds. The programmer portion has all the special hex/binary/decimal conversions as well as register operations like ASL, ROL, LSL, AND, OR, XOR, etc. The plotter portion will plot equations. Other features include 26 memories, full mouse or keyboard operation, pull-down menus, and iconization.

Bauku
A complete chequebook system offered by the author as shareware. Update to version on disk number 120.

Badger
Reminder program for your startup-sequence. Badger will open a window and display any important events that are 'due'. Badger will not bother you if there is nothing to report. Events are entered via menu and prompts.

AmiGantt
A project definition and management tool designed to create a simple, interactive method of outlining the task required to complete a particular project, using the GANTT chart as the input format. AmiGantt displays the project in a multi-window mode with separate windows for the GANTT chart, task information input, resource histogram display, and Pert chart display. Up to 500 tasks may be defined for any project, and a project may contain other projects as tasks.

LoanCalc
Entirely keyboard driven mortgage utility. Although similiar programs exist, this one is unique in that it is designed to track 'Open' mortgages that allow any size payment to be made at any time as well as providing an amortization table for fixed mortgages with monthly, semi-monthly, bi-weekly and weekly payment schedules.

Business 2

$8.95

MemoPad
A shareware intuition-based memo reminder program. Nicely done.

IRA
Allows easy calculation of future values of investment. Enter the beginning investment value, annual percentage rate, annual deposit amount, and number of years, to compute the future value.

Calendar
A program that generates calendars in any one of 10 standard formats for any year after 1900.

DisSecretary
This program can be used to file information in a "file cabinet" type environment. It is well suited for jobs such as maintaining a disk catalog, or user group membership, etc. Included is a data file of the library catalog, disks 1 to 310.

HP11
Emulates an HP11C calculator including the program mode. Features an ON/OFF button that turns the calculator into an icon that will sit and wait until you need it again. This is version 1.1, an update to the version on disk 153, and includes a few bug fixes and minor changes.

StockBroker
A program that helps you follow the recent table of exchange from one (or more) share(s). But of course you must tell the Amiga the recent table of exchange every day. Requires AmigaBASIC.

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Phil Campbell's Entertainment

P.D. Games Megapak

Blown all your cash over Christmas? Well, here's a bargain - the Games Megapak from Allan Crouch's Public Domain Library. The Megapak contains 10 double sided disks of P.D. games for the Commodore 64 for only $40 post-free. There are over 300 games on this lot, which is great value for money, and it's fully menu driven. For full details contact: **Allan Crouch, 29 Happ Street, Auburn, N.S.W. 2144.**

Amiga - Australia's Tap Selling Computer

It's official! In the months leading up to Christmas, more Amigas were sold than any other computer. The Amiga now rules the roost in the home computer arena - the Atari ST has actually dropped off the bottom of the sales charts. While companies like Apple have a higher "dollar value" turnover than Commodore, that simply means they sell their computers for a lot more money.

And an the Warld Scene

Commodore have just announced the sale of Amiga number 2,000,000 ... yep, the 2 millionth Amiga! Momentum is building up all the time - the second million sales were racked up in just over a year.

AMOS BBS naw an line

Programmers using AMOS, the game creation language from Pactronics, can now dial in to a gold mine of hints, tips and information on the PREDATOR Bulletin Board System. Plug in your modem and dial 02 604 6816 and you're on your way. For people who prefer their information dished up on traditional paper, Issue 5 of the Amos Newsletter has just been released. If you're a registered member of the Amos Club, your copy is on the way.

New Amiga Titles

Watch out for these new titles from various distributors - *Wings of Death* - classy but nasty looking shoot-em-up; *Rogue Trooper*, comic strip beat em up with style; *Drivin' Force*, a multi vehicle racing game with 50 frame per second animation but trashy graphics; *Dragon's Lair II - Timewarp*, more animated adventures with Dirk the Daring and Daphne the Delectable, with all the standard flash looking graphics, and more scenes than ever before; *Lightspeed*, a 3-D space adventure game with multiple star clusters to explore in a starship that's 15,000 feet long; *Simulcra*, a 3-D maze that lets you test your skills as a space pilot in a world of fast, smooth vector graphics; and finally, *Wrath of the Demon*, a horizontally scrolling demon-basher that's said to outclass even *Shadow of the Beast II*.

MINDSCAPE COMPETITION OF THE MONTH

FIVE BIG PRIZES TO BE WON

Yes folks, this time Mindscape are giving away five copies of **CELICA GT4**, the hot new car racing simulation.

Judging from the number of entries we've received in past competitions, everybody loves word games - so here's what you have to do. First, make as many words as you can from the letters "OH WHAT A FEELING." You can only use each letter once. Then arrange as many of your words as possible into a sentence. There will be three prizes for the entries with the greatest number of words, and two prizes awarded at the judges' discretion for the best and most entertaining sentences.

PLEASE COUNT YOUR WORDS AND WRITE THE TALLY CLEARLY WITH YOUR NAME AND ADDRESS AT THE TOP OF YOUR ENTRY.

Then send it into:

Phil Campbell, PO BOX 23, Maclean, NSW 2463 by February 3rd 1991.

Commodore "baby" CD-TV for Easter release

Rumour has it that the keenly awaited "Baby" Amiga-in-a-CD machine will be released to a salivating public at the Royal Easter Show. More news soon on the machine that promises to hold the future of home computer entertainment.

Micraprase Campilatian Pack

With war in the air, Questor have just announced the release of a bargain priced Microprose compilation pack. The pack features *Gunship, Silent Service* and *Airborne Ranger*, letting you fight it out on air, land and sea - at just $59.95 for the pack, you're getting three great games for the price of one.

Mindscape Navember Prizewinners

Winners of the November *Killing Game Show* competition are as follows:- Robyn Reed, Bribey Island, QLD; Jamie Finlayson, Allambie, NSW; Chris Wootton, Mornington, Tas; J Worboys, Toowoomba Qld; P Rudder, Belmore NSW; David Thompson, Merewether NSW; D. Walker, Blackwater Qld; Deborah Ockwell, Peachester Qld; Dan O'brien, Grafton NSW, and someone who didn't bother putting a name on the back of the envelope! Prizes are on the way thanks to our buddies at Mindscape.

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Entertainment Letters

Send your entertoinment letters ta: Phil Compbell, PO Box 23, Maclean NSW 2463, or fox them in on 066 452060. Keep your letters brief ond to the point if possible! And remember, entertoinment only ... letters obout technicol stuff go to the other end of the mog!

More PD?

Dear Phil, I think the mag is great, and have been collecting it for quite some time. I have only one suggestion - I'd like to see you reviewing more PD programs as I'm always having trouble picking which disks to buy. I'm sure other readers have the same problem.

Jason Rooimans
Taree, NSW

Ed: *Thanks for your comments Jason. I'll have a look at the latest PD games some time in the near future. Meanwhile, Tim Strachan at Megadisc has a huge PD collection, and he's always happy to give advice. You can phone him on (02) 959 3692.*

You aught ta be ... congratulated

Dear Phil, I would like to congratulate you on a great magazine. It is the best and cheapest I have seen. Have a great Christmas.

M Summers,
Albion Park.

Ed: *Thanks. You've got great taste in magazines - and ACAR is getting better and better! Still the best value in town. (And I did have a happy Christmas. Hope you did too.)*

Bad Luck far C-64 Bad Cats

Dear Phil, I have just bought a game for my Amiga called *Bad Cat*. When I had my friend over to my place to see it, he loved it - but we've found that *Bad Cat* is not available on the C-64. I tried to look for one, but none turned up. Why hasn't *Bad Cat* been released on the C-64? The game is really cute. Can anyone do something about it?

J Henry,
Camp Hill, Qld.

Ed: *Bad luck,* Bad Cat *fans. In spite of protests to the contrary, the supply of C-64 software is slowly but surely drying up. One reason is that so few people are buying it. Maybe that's because so many people feel free to make pirate copies of games - a lesson for Amiga users who do the same. Anyhow, as far as I know there are no plans for a C-64 version of the game. The only people who can do anything about it are programmers - maybe you should start learning machine code!*

Amiga publishers

Dear Phil, I think your team does a magnificent job of producing a magazine, with excellent game reviews (thanks to excellent reviewers), the Adventurer's Realm, and the bit I like best, the Hints and Tips. I am writing to you for your advice on which Amiga game publisher I should send my game ideas to.

Chris Turnadge,
Morphetville SA

Ed: *There are a few Australian distributors that might like to hear your ideas, but you'd be better off if you actually turned them into programs first! Best idea at the moment though is to contact Neil at Pactronics, who runs the AMOS club. AMOS is a new language that makes writing games a breeze - well, it's still hard work, but it's easier than it was. Maybe Neil could put you in touch with a programmer and you could come up with a team effort. Pactronics can be reached on 02 748 4700.*

ENTERTAINMENT HINTS & TIPS

Greetings, from the Icemon! The Entertainment Editor, in his infinite wisdom, has decreed that I'm in charge of *hints & tips*. It's my own fault really, I told him he should have more stuff for the 64, and he told ME to find it!

So what I need is heaps of feedback from YOU, the Commodore 64 owner in the front row, so we can convince him that the 64 needs more coverage! My address, if you need some help with a game, have got some pokes or tips to tell me about, or if you just want to talk to a fellow Commodore 64 freak, is :

The Iceman,
MSF.550,
Toogoolawah, Qld. 4313

Most letters with an S.A.E. stand a fair chance of getting a personal reply. Enough of the blurb - on with the tips.

Klax

This is a popular game at the moment, so here are a few tips that should help you beat my best score so far, of 921285.

◆ On levels that require a certain score to be reached before completion, concentrate on getting diagonals, for 5000 points each.

◆ For levels that need a certain number of klax to continue, aim for rows of four - they score as two klax but are much easier & quicker to put together. Persevere when trying to make a big X on bonus screens, you'll score mega points & jump through way through the game.

Ultima V

Here are two more tunes to play on a harpsicord, when you find one! 1345 1345 1345 3132 3321 13554 1345 3121 or 123 354 4656543 56543 354 43231

Star Soldier

Having trouble building your rank up in this old Commando clone? In that case, save your position BEFORE you equip your character. Buy the equipment you want, then reload your position and you'll have your original money, and all the equipment you just bought.

Sentinel Worlds

◆ To help you raise some cash, raid the armoury on the raider craft. One item in particular is worth quite a bit when you re-sell it, so get that item then leave the armoury.

◆ Now leave the armoury & re-enter, the same item is back, so collect it again.

◆ Repeat as often as you can, but make sure to leave yourself enough time to fight your way off the ship.

Help wanted

Edmond Tatti, of 13 Handsworth Crs Tullamarine Vic 3043 needs help with an old Parker Bros game called *Montezuma's Revenge*. Can anyone help with some tips or pokes?

Neville (see above) would like some help with *Xenon II* and *Rocket Ranger*. Any hints or type-in cheat pokes would be appreciated.

Eliminator

Greg Munro contributed these passwords for starting each level of *Eliminator:*

AMOEBA, BLOOP, CHEEKI, DOINOK, ENIGMA, FLIPME, GEEGEE, HANDEL, ICICLE, JAMMIN, KIKONG, LAPDOG.

Greg also points out that there's a bug on level five. If you fall in the water when collecting the weapon icon on the right hand side, the program goes into a loop. There's another bug on level 13 that gives infinite lives if you die at a certain point with a certain number of vehicles left - that's pretty vague, but Greg's not quite sure how he did it! Finally, to gain high scores, Greg says you have to be prepared to lose ships at strategic points - just before the next 10,000 bonus - so you can shoot things twice and build up your score.

Antheads - It Came from the Desert II

Neville Clarke of Albany WA offers these tips for the sequel to Mindscapes *It Came From The Desert*.

Neville says the combination to the safe is most important - the numbers for the combination are gained by shooting antennae off people who have ant heads. To shoot antennae off, simply aim at the base - if you manage to hit one, just pull left or right on your joystick to get the other one.

The safe is in the Morgue in the basement of the hospital. When you get in, block the door with the wheel chair so the doctors and nurses can't get in. Once you've revealled the Anthead plot, go to the situation map at the police station.

Place army, workmen and other townsfolk at key areas like the airport, the town, North Volcano and the armoury.

On the eighth or ninth day fly to the ant nest, which is due North of the North Volcano. Wait until the ant appears, then spray him. Land the plane on the road then walk to the nest. Once you've found the queen ant and set the explosives, run back to the second entrance - don't hang around, or the caves will collapse on your head!

Amiga tip - F-29 Retaliator

Jason Rooimans of Taree, NSW, wrote in reply to Andrew Cumpston's request for help with *F-29 Retaliator* in the November issue.

Jason says that if you type THE DIDY MEN (with spaces) at the enrolment screen, then select the COLONEL icon and press RETURN, then select the battle area you want and press "7" for mission control, then ACCEPT a mission (without selecting one) then go back and select a mission and start the game ... phew! ... then you'll find as you start there'll be some info about the cheat mode on the select screen. Make sense? Give it a try.

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THE UNTOUCHABLES	70,230	Simon Watford
WONDER BOY	237,650	Kishore Ludbey

Scores followed by (c) indicate that the game has been completed.

Average graphics but addictive gameplay. That's what JURIS GRANEY discavers as he checks aut ...

UNIVERSE - 3

The first Stellar Expansion began on May 10th 2029, with a practical demonstration of the hyperdrive effect at Franklin Laboratories' Building number 4 in Hawthorne, Nevada. Only 11 years later the starship SS Gerhardus Mercator made a successful jump over two light years through hyperspace. Less than 100 years after that first jump, the colonies around Earth (known as the Home Cluster) consisted of eight planets and over 18 billion people.

Hyperspace proved to be rather curious. It was totally devoid of any energy or matter, yet spacecrafts could operate normally within its bounds. A trip through Hyperspace would take 6.8 days. There were two limitations though. One was that it consumed lots of energy and secondly you could only go through hyperspace at a certain weight.

Suddenly, it seemed that both these problems were solved. A huge alien artifact was discovered - a Hyperspace booster able to push a space craft through thousands of lightyears.

You live in a cluster of stars known as the Local Group. For years, the Local Group had been receiving packages from the home cluster to help construct new colonies and update their current technology. Fifty years ago the shipments stopped coming. The next ten years were known as the Great Panic, a period of interstellar war and piracy that nearly destroyed your civilisation. Fortunately, at the peak of the hostilities, another hyperspace booster was found. The knowledge that two-way communication might be established acted to calm the Local Group, but not for long. In the end the Local Group were split, forming two new groups. The Federated Worlds and the United Democratic Planets.

During the years of the divided Local Group, you were employed as a deep-cover agent for the Federated Worlds. You discovered a plan to completely destroy the FW. Almost singlehandedly, you managed to thwart the scheme. Now, three years later, you have been selected to command a mission back to the Home Cluster. Your mission isn't easy - especially when you find that one of your 18 crew members is trying to sabotage the ship and kill you. In the crew you have two helmsmen, six crewmen, three doctors, one MP, an engineer, a first officer, a second officer and three supervisors. Who is trying to sabotage the ship? How do you control the ship? What are the mission orders once you land? That's for you to find out!

In a word, the graphics in *Universe 3* are awful. All the power of the Amiga, and all they can come up with are scrawny graphics with people that look like chairs - to top it off, the animation is slow and dodgy.

Like the *Ultima* series, the view is shown from above. You can collect gear like UV Googles and Data Recorders. Most commands are issued from a fold-down screen accessed with a simple icon. These commands are fairly typical - Examine, Remove, Break and other standard adventure-style instructions.

There is no music, and sound effects are sparse - only pings when you run into walls or when you do something wrong. But somehow, *Universe 3* still has an addictive side to it, which really will keep you stuck to your computer. It's definitely a brain - a real turn off for most shoot 'em up freaks. But it's certainly worth a look. And if you're into adventure games, this one is the go.

Ratings:

Graphics	32%
Sound	28%
Gameplay	75%
Overall	**70%**

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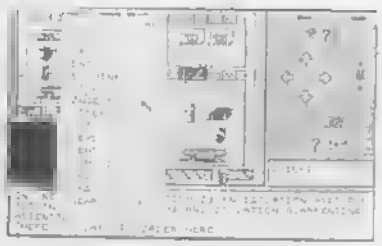


Quick Shots

A quick look at what's new in the world of games

Immortal

The Immortal is an action/adventure/strategy game that requires 1meg of memory, a joystick, lightning reflexes and something other than a pumpkin on your shoulders. It's a very well planned and excellently documented game - the manual has all the necessary tips for combat as well as some cleverly disguised hints for the more difficult parts of the game. The graphics are not perfect but they're actually better than they look on the box - the screenshots on the box are tad misleading, giving the game a chunky look. Torches flicker along the walls and the game scrolls beautifully.

Gameplay is magnificent once you get going. The game saves at the end of each level so you can start at the level you left. In this game being a wizard is no mean feat, let alone a mere apprentice. You must closely watch your vitality, or life, as this has a nasty habit of sneaking down when you're not looking. Lucky for us there are nice comfortable piles of straw to lie down in and recover. Read the manual in detail to pick up hints about sleeping.

The Immortal is not your average "wizard running around annihilating bad guys" type of game. This wizard is quite a considerate person. Unfortunately, though, goblins and trolls think old guys in pointy hats are easy prey, so you must be on your guard.

Overall, *The Immortal* is definitely one the better games I have played. You'll like it if you feel you need a change from mind numbing shoot-em ups, as it requires a reasonable degree of forward planning.

by Michael Lamont

Ratings:

Graphics:	83%
Sound:	72%
Gameplay:	88%
Overall:	82%

Distributed by:
ECP
075 96 3488
RRP: Amiga:

Klax

I quite enjoy the odd puzzle game - and *Klax* is definitely an odd puzzle game! Your job in *Klax* is to make complete lines of matching tiles (called, funnily enough, klax, probably after the noise they make) so they disappear and make room for more tiles! After a certain goal is reached, either by completing enough *Klax*, reaching a certain score or surviving enough tiles, you'll proceed to a higher, harder level. To help liven things up, the longer you spend on a level the faster the tiles start moving. There are 100 levels in *Klax* so it'll take quite a while to see them all, even with the help of the warp screens that send you off to higher levels.

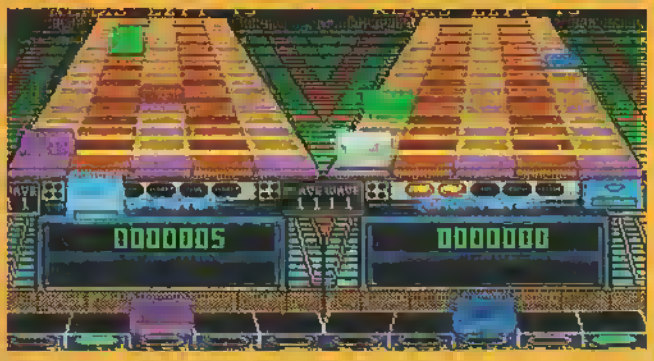
Klax is an arcade conversion, although I've never seen it at the local arcade - then again, my local arcade still thinks *Rygar* is new! The graphics on the C64 version aren't up to the same standard as the Amiga version, but the backgrounds are still very attractive - with a game that's as good as this the graphics don't matter as much, leaving the C64 every bit as playable as the Amiga version.

I'd thoroughly recommend this game to anyone who enjoys *Tetris, Blockout* or any other game that requires both sensible strategies and quick reflexes. The only complaint I have about the game is that it's far too addictive - it's very easy to play, so you find yourself loading it up 'for just a quick game' and still playing it hours later. And in this age of one-play-wonders, who's going to worry about that?

by Stuart E.

C-64 version reviewed, Amiga version also available.

Distributed by:
Questor
R.R.P. $39.95



Sentinel Worlds

Something smells rotten in the system of Caldorre - and it's up to you and your crew to clean it up. *Sentinel Worlds 1* is a role playing game set just before the year 3000. You are the commander of a Federation Interceptor - your mission: to boldly go where everybody else seems to be going, and stop them disappearing when they get there!

Initially, the game seems very slow - your crew lacks experience and your craft is only at a fraction of its full capabilities. Surviving your first few battles is relatively easy (by escaping!) but winning them is a different matter. Once you've destroyed a couple of Raiders, you can head to one of the towers on Caldorre to increase your characteristics. (Hint: give each character at least 16 comprehension points when starting - you'll get more skills and will be able to reach your maximum comprehension sooner in the game.)

As you play, the story line keeps developing, as should any good RPG, and soon the game has your interest to a level that will keep you playing, despite the ridiculous amount of disk juggling necessary to play. It's a pity that two disk drives aren't supported, as the amount of disk swapping is the only real fault in an otherwise excellent game.

by Stuart E.

Distributed by:
ECP/EA (075) 96 3488
RRP: C64 Disk $39.95

AWESOME

AWESOME (adj) Inspiring reverential fear.

Well, that's what the Australian Pocket Oxford Dictionary says, anyhow. And believe me, this is one game that lives up to its title. From the ever improving PSYGNOSIS stable, and distributed by Mindscape, *Awesome* boasts some of the best shoot-em-up graphics ever.

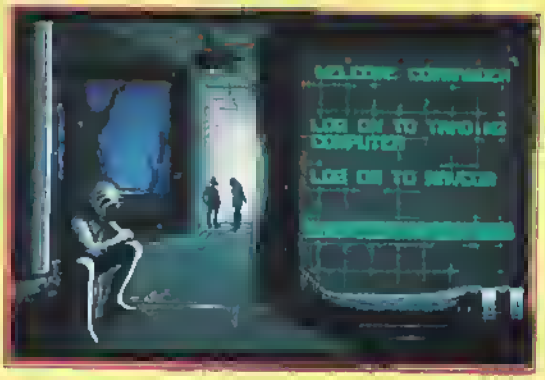
Stage One features a glistening rocket surrounded by enemy drones. Push the joystick and the whole universe rotates around you - a novel twist on the art of navigation. The action is fast and furious, though not too hard. The real test is yet to come.

Stage Two puts you in the middle of a meteor shower... quite a different experience to the shower you had when you got out of bed this morning. If these guys hit you, you're in trouble. Remember the huge mean centipede in *Space Harrier?* Well, now he's all grown up, and you get to meet him in stage three. Not a pretty sight, with rolling eyes and gleaming spines protruding from all over his body - not only that, he moves like greased lightning. This guy really is awesome, with fine graphical details and super fast animation.

What next? Well, for starters there's a horizontally scrolling section coming up that I haven't quite mastered. And by the look of the pictures on the box, so far I'm only just scratching the surface. Along the way, your starship can be considerably enhanced - you can pick up spherical bombs, pulse lasers, peripheral guns, and even a wide beam plasma cannon. There's a trading phase built into the game too, and a navigational computer that lets you plot a course between planets. The full stereo soundtrack is nicely done, with gutsy music and solid sound effects. What else could anyone ask for? Oh yeah - a T-shirt. There's one in the box, and it looks pretty neat, just as long as you don't mind walking around with "AWESOME" stamped across the middle of your chest. Priced at $79.95, AWESOME isn't cheap. But it sure is good.

Ratings:
Graphics 93%
Sound 92%
Gameplay 85%
Overall 90%

Distributed by:
Mindscape
RRP: Amiga $79.95



Looks can be deceptive, says SCOTT CAMPBELL as he does his best to conquer "the toughest and fastest platform game yet

YOLANDA

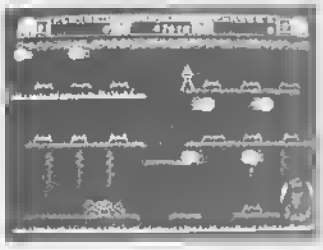
by Scott Campbell

If the Great Gianna Sisters was too tough for you, then you might as well stop reading now. *Yolanda* is the toughest and fastest platform game on the Amiga ever. Period. If you don't like driving yourself to achieve perfection, or if your reflexes are tested by checkers, this game is not for you. Nor if your idea of speed is taking the dog for a walk. But if you are an arcade wizard, with a penchant for puzzles, then, seriously, this is the ultimate challenge.

At first glance, *Yolanda* didn't appeal to me. Drab screens, old-style platforms, adventure-style story, and you seem to die constantly. It just seems too hard. But with a bit of patience, you'll start to get somewhere, and it strikes you that this is one humdinger of a game.

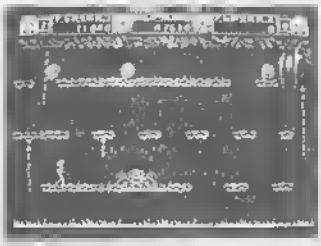
The idea is that the comely Yolanda has to recreate the 12 labours of Hercules. Each labour involves three, four or five screens, and you have to get to the door of each screen. Starting off, she has three seconds to jump somewhere safe or she's dead. There are ropes to jump to and climb, and ledges separated by frighteningly large gaps. Some ledges burst into flames if you touch them. And there are nasties to avoid. But the worst thing is often you can't get to your goal without finding the hidden ledges. And you can only find them by trial and error, which involves a lot of dying.

There is a "trainer" mode to give you an idea of what the actual labours will be like. The trainer is supposed to be for beginners, but after the first two screens, it's just as hard as the real game! And you have fewer lives! I still haven't got through it, yet I've managed to get through a couple of the labours. They must make them tough at Vectordean, the creators, if this is supposed to be easy.



You can play in wimp mode (which I call sensible mode), which gives you seven lives. Or hero mode (i.e. crazy), which has four lives, and you start on a different labour every time you die, so by the time you've registered which labour you are on, you're dead. And there is legend mode; 1 life (aka insanity mode).

A problem with *Yolanda* is that not only is it tough, but it almost overdoes the essential frustration bit. *Yolanda* often requires almost unreasonable precision from a fast joystick platform game. Sometimes, for example, you have to jump off the exact pixel at the end of a ledge to get to your target. That's what I call tough.



Like *Rick Dangerous*, you'll find yourself dying in a different way each time you play. What is more irritating is that you often die the same way every time, and there doesn't seem much you can do. You have to keep persevering, though, and eventually it gets easier, and you start to finish screens. That's when the game becomes really addictive, and you can't help trying one more time.

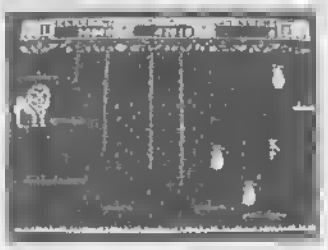
This is helped by the fact that there is very little time between lives, labours or games. This is not forced on you though; you press the button when you're ready. It's a pity more games aren't like this. The speed is rather overwhelming at first, but it soon hooks you, and I found myself getting intolerant of the one second gap between finishing and starting again!

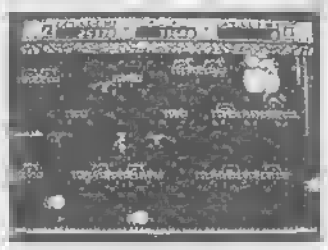
So *Yolanda* is definitely recommended, not to the average Joe Normal, but to you skilled and patient Zen joystick geniuses out there.

Ratings:

Graphics:	65%
Sound:	65%
Gameplay:	83%
Overall:	**78%**

Distributed by:
Mindscape
(02) 8992277
RRP: Amiga $59.95



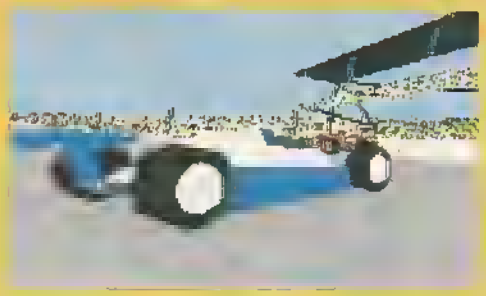


COMPUTER SPOT GAME OF THE YEAR

INDIANAPOLIS 500

Looking for some high speed thrills? Phil Compbell previews the gome thot scooped the pool ot the 1990 Computer Spot Gome of the Yeor Awords!

First and foremost, this game is fast. No point trying to simulate the Indy 500 if your graphics are going to dawdle across the screen. They don't. The 3-D filled-vector style graphics make a pretty good fist of simulating the wind in your hair at 220 miles per hour. The "from the driver's seat" perspective is convincing, and I found myself swinging round on my swivel chair as I hurtled round bends.



Trackside, the graphical details of the game really shine. Grandstands, for example, are built up from hundreds of struts and geometric parts like a giant meccano set. Yellow shirted officials stand by the track, while the multicoloured sea of spectators make the screen look like a scattered plate of fairy bread.

In a word, the game looks good. There are plenty of fancy features to play with too. First, you'll need to choose a team and a car - try the English built March Cosworth, the American Lola Buick, or the Roger Penske designed Chevrolet. I chose the Cosworth, and steered it onto the track for a practice session. Naturally, in a game with this much depth you can tune each car to perfection with your own suspension and chassis adjustments, but that's best left until you've had some experience.

The race begins, and cars start hurtling by at an alarming rate. They even make that angry summer "mosquito buzz" as they close in from the rear and flash past - great sound effects, especially pumped through the stereo system. The higher the volume, the better the atmosphere.

Steering is tricky. This is a sensitive machine, and too much grunt on the joystick will cause a bad case of oversteer. That means you'll find yourself spinning in front of an oncoming car, and the consequences can be painful. With luck, you'll simply run off the track - otherwise, car fragments will fly everywhere. The spinout sequences are among the best in the game - the whole world outside your car twirls around the screen, leaving you reaching for your carsickness pills. Uuurk.

Highlights of the race can be replayed from any one of six camera angles - a great feature if you've just pulled off a tricky manoeuvre or made a spectacular mistake.

All in all, *Indianapolis 500* is a worthy winner of the inaugural Computer Spot Game of the Year Award. Great graphics, top sound effects and plenty of high speed action make it one of the best racing games I've ever played, and at a retail price of just $49.95 for the Amiga version, it represents very good value.

Distributed by:
Electronic Arts
075 963 488
RRP: Amiga $49.95
IBM $59.95 combo

Jump in your space ship and explore an artificial universe as GREG MUNRO unravels the mysteries of ...

XIPHOS

reviewed by GREG MUNRO

My concise Oxford Dictionary tells me Xiphos is greek for "sword." Which is a bit strange, because in this game Xiphos is no low-tech implement of destruction. He's a super intelligent computer, created by one of the founding galactic races, the Xiphons.

The Xiphons became disillusioned with the civilisations they had established and opted out. Closing their borders, they began the Xiphos project. To outside observers, Xiphon space seemed no larger than before, but using space expansion techniques, Superbrain Xiphos made a gate giving access to an infinitely large artificial space. Somewhere in this demi-universe was a gate to a futher universe, and so on - six universes in all.

The Xiphons enjoyed their new paradise under the government of Xiphos. But then disaster struck. Everything stopped working. On their poly-dimensional TV screens was a message from Xiphos, saying in effect "I QUIT!" Panic ensued. Civilisation crumbled, and when it gradually re-emerged, it was relatively primitive. Civil war raged, and the energy desperate Xiphons polluted their once green planets until they became uninhabitable. They were forced into space, and eventually things settled down to the constant war that now rages between two rival factions, the Pios and the Qons.

Meanwhile, back in the universe outside, strange things happened near Xiphon space. Space liners, and occasionally whole populated planets disappeared. A delegation was sent to investigate, and decided that for the good of the galaxy the insane Xiphos had to go.

Your mission from the Galactic Council is to get to the central universe of the Xiphon system, locate and destroy Xiphos. Each Xiphon universe extends infinitely, but contains a populated region. Entry and exit points are at either extreme of this inhabited area.

These artificial universes are unlike the primal universe. Populated areas are so polluted they contain a thin atmosphere of, believe it or not, CFCs and food additives! A strong "potential field" stretches from the "North" to the "South" poles (left to right across the map), which acts like gravitational force pulling you back towards the North Pole. Moving South uses energy. Moving North restores energy.

Your ship, the Arrow (arrows vs sword?) doesn't have enough energy, fuel or weapons to get to the south polar base and enter the next universe, so you must buy from Pio and Qon bases on the way with battle credits earned by destroying ships of the opposite faction. This involves making sensible political decisions, like joining the stronger side in a battle, or the side with the most bases nearby. You also have to keep in mind which faction controls the polar gate. An imaginative scenario.

What about the gameplay? *Xiphos* is a 3-D adventure, very like *Space Rogue*. The emphasis is on combat, with a minimum of diplomacy, but strategy and skill are still essential. Although 3-D is notorious for spectacularly boring gameplay, *Xiphos* is an exception. Like *Sherman M4*, it combines filled vector graphics with a fully detailed bit-mapped background, which means in English that the backgrounds are fully detailed, while the spaceships and bases are coloured-in frames.

The planetary views are spectacular, though only a backdrop - you head towards a planet as long as you like, but never get nearer. The filled vector graphics are better than average, with fast action. Interaction with alien bases is carried out via an adventure game style parser. Other parts of the game are controlled with keys, mouse or joystick. Like *FA-18* or *Space Rogue*, there's a picture of your control panel below the 3-D window. The most important element is the radar. Combat is extremely hard! I always run out of missiles before destroying enough ships to buy a decent amount of energy.

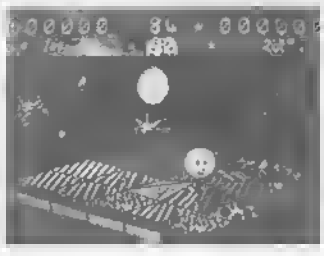
If you like 3-D space adventures with a long term challenge, take a good look at this one.

Ratings:
Graphics: 75%
Sound: 72%
Playability: 75%
Addictiveness: 65%
Overall: 72%

Distributed by:
Questor
(02)662 7944
RRP: Amiga $59.95

TONY SMITH introduces a fun little game that's sure to leave you hopping mad!

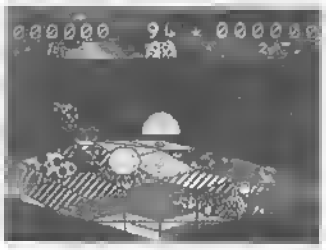
Fat Filbert is one of those cute globular characters who lives in an unlikely isometric 3D landscape. In two player games, he's joined by his friend Bulbous Bilco, and they bounce around changing the colour of the tiles. Yes, this is one of those diabolical bouncing challenges which gets harder and harder as you bounce though the one hundred and twenty eight different scenes.



Manix is similar to several other games - *Marble Madness, Magic Marble, Bobby Bearing, Zoom, Jumpin' Jackson, Spidertronic, Spindizzy* and many more - each with their own particular good and bad features. *Manix* is extremely difficult, and frustration soon reaches joystick throwing level, so if you have highly strung players in your group you'd best stay clear of this one. However, if you're a patient enterprising type, give *Manix* a go.

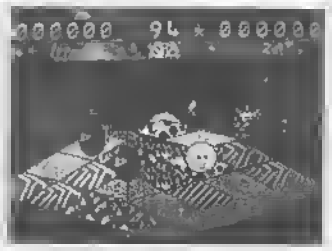
One of the most endearing features is the custom menu which allows you to modify the various features of the game, rather like a mini-construction kit. A multitude of parameters can be altered - enemy, bonus or miscellaneous. Parameters can range from 127 to 0, which means if you give the enemy bee a parameter of 127, it will not go away, while a level of 10 means it probably will not appear every game. Ball enemies can be set to seek or ignore the player's sprite, fuses can be made longer, balls and acid pools can be made less dangerous and many other features can be changed including starting levels. This doesn't mean a beginner can see all of the levels - there is a password feature every eight scenes to keep you honest. The first level is simple to get you started - several grenades fall from the sky changing the colours of the tiles when they explode.

Now it's your turn, Filbert - bounce around on each tile until it reaches the correct colour, matching the original colours and patterns. Sounds easy, and it is. The tiles stop changing when the right colour is reached. But don't get your hopes up. On later levels the tiles cycle endlessly, leaving you jumping around in a frenzy. The joysticks really fly when you're on a sloping block with deadly water at the side - and if that's not bad enough, there are over 20 different hazards and helpers.



Try watching the demo for a while - level 78 looks interesting. Some objects like cans can be used as weapons, but watch out for the red and silver ones. Misused, they can backfire and kill you. Bonus potions can give time or points and if you have the time, you can throw some cans into can bins and score big points. As in most isometric 3-D games, joystick movements are a little confusing at first - the little bouncing blimp will splash into the water several times before you get the hang of it. Not only that, objects like dizzy potions cause a reversal of the joystick, which is absolutely devastating. Acid pools and spikes are usually fatal, and just as you almost clear a level, four more grenades fall from the sky and you have to start over again.

Sound and graphics are well done, with a natty loading tune and plenty of sound effects and music. Animation is smooth and the characters are well drawn. Backgrounds are colourful, with jumping fish, sea monsters and periscopes popping up in the water. They're just harmless decorations, but a nice touch anyway.



Manix is a colourful, highly addictive, frustrating and difficult game - just the thing to while away a few hours. I recommend it.

Ratings:

Graphics:	79%
Sound:	81%
Gameplay:	78%
Overall:	**79%**

Distributed by:
Mindscape
(02) 899 2277
RRP: Amiga $59.95

TEAM YANKEE

Believe it or not, some people are actually old enough to remember the Cold War. You know - the time before the Russians and the Yanks were bending over backwards to be mates. Back in the bad old days, people lived with the spectre of a Third World War being fought between America and Russia - nobody had even heard of Saddam Hussein. Times change. But as usual, there's always a war going on somewhere. And I've always found the strategic side fascinating.

Back at school I used to play contour map war games with my mates instead of listening to my maths teacher. If he'd had any brains he would have applied maths to tank manoeuvres and I'd have passed with distinction instead of failing miserably!

Team Yankee is the game of my dreams. This is the game I would have designed if I had the chance - or if I knew anything about maths! It's the sort of game we would have drooled over back at school. *Team Yankee* puts you in command of a company of tanks - made up of four units of four vehicles. The scene is Europe and those Russkies have started the Third World War, fought with conventional weapons. Your four units have varying strengths and weaknesses. One has a limited number of long range missiles and little else while another has awesome capabilities all round. You start off life as a private in charge of the units and as you win a series of battles you're promoted. Of course, as you're promoted, *Team Yankee* gets more complex.

This is not just a shoot-'em-up. You're taken through the whole gamut of warfare. First you are briefed on your mission. Next you must program when and where you want artillery back-up. Then you're taken to a four-way split screen, each section of the screen giving a view from one of your tanks. Now comes the fun:

- ◆ Call up one of the units to full screen;
- ◆ Call up the full battle map;
- ◆ Position the unit;
- ◆ Choose the formation of the unit - straight line, vee shape or whatever;
- ◆ Set the speed;
- ◆ Load your guns with either long, medium or short-range shells;
- ◆ Select normal or magnified view and normal or infra-red view;

Now sit back and watch your maps for Russian troop movements as your units move into position, and repeat the procedure for each of your other three tanks.

The fighting is fast and furious. Sometimes you'll only have one or two Eastern Bloc units to battle. Other times they'll come at you four at a time, and you have to be super quick - you have to switch screens fast as each unit joins the fight, and while you're in battle with one unit, you'll find another under heavy fire.

Team Yankee is as addictive as they come. It's imaginative, complicated yet still user friendly. It's battle scenarios are challenging, but not out of reach. Some players may prefer the simulation effect of a game like *M1*, but for me the mix of arcade shoot-em-up and strategy is just right.

Distributed by:
Questor
(02) 662 7944
RRP: Amiga $69.95

At last! A Psygnasis game with just the right balance between brains and good looks! Let ANDY PHANG introduce you to what he calls "the most playable platform game ever ..."

Spell Bound

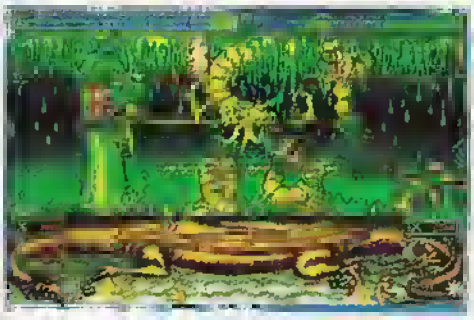
Every Amiga owner knows that Psygnosis games have great graphics and sound, but often limited gameplay. Well, the release of this game will change all that. Reverse the trend, even. You see, *Spellbound* is probably one of the most playable platform games yet on the Amiga. It is also a game which has some of the most unspectacular (euphemism time!) graphics and limited sound effects ever to be found in a Psygnosis product. How's that for a complete about-face?

The plot goes something like this. You are Sortice, apprentice mage to the mighty Poinat The Wizzo Warlock. It seems that Poinat's step brother, Krookose, has kidnapped your master and taken him to Hell (with a name like that, he probably deserves it). Although you don't particularly like Poinat, student loyalty (and the fact that if you don't rescue him, you'll never be able to graduate into a fully-fledged warlock) stirs that fighting spirit in your brave elven heart. It's up to you, Sortice old son, to make your way past nine fiendish levels and rescue Poinat before he is lost to this earthly plane forever.

Spellbound has a lot going for it. The game is addictive, addictive, addictive! I just could not find the willpower to turn my Amiga off. As you complete each level, you are given a code word which will let you start off from your current position the next time you play. With this, I was able to make continuous progress into the game.

There are items to be collected, including bombs, potions (to increase your lifeforce), and scrolls (to increase magic power). You have six spells to choose from, each requiring a certain amount of magic power before they work. These spells include levitation (allows Sortice to fly), Fire Wall (creates a barrier of fire), Water Wall (barrier of water), and Starburst (shoots energy in all directions).

For added enjoyment, there is a two player option (the second player gets to be Sortice's twin brother Cerorapp, or Mr. C. rapp as his friends call him). The game is that much easier to play with two people, especially in the higher levels filled with all sorts of horrors that only Hell could provide. It's also that much more fun! However, be careful when casting spells or firing your weapon. If you hit your playing partner, his (or her) character's lifeforce will be reduced (and you might get a whack on the head too...).

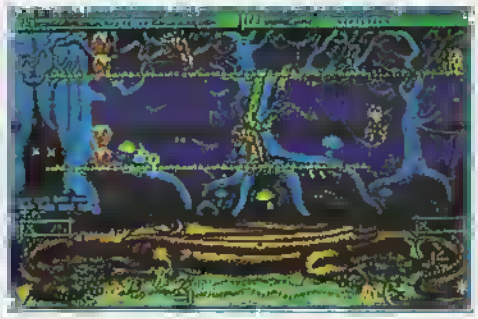


I guess if Psygnosis decided to improve the gameplay of its products, something had to go. In this case, it's out with the flashy graphics and sound that has become a Psygnosis trademark.

Ratings:
Graphics: 75%
Sound/Music: 75%
Gameplay: 90%
Value: 88%
Overall: 88%

Distributed by:
Mindscape
(02) 899 2277
RRP: Amiga $59.95

Don't get me wrong, the graphics aren't bad. Indeed, the horizontal scrolling is extremely smooth, and the animation is of an acceptable Amiga quality. It's just that they could have been much better. Perhaps if the programmers had used the bottom half of the screen instead of making *Spellbound* look like one of those American NTSC Amiga efforts.



As for the sound, the title music does contain a few samples of digitised speech, but otherwise both music and sound effects are pretty ordinary. The benefit of all this is, of course, that the gameplay IS great, and that's the main thing. Besides, without all the extra kilobytes that graphics and sound would have taken up in disk space, the programmers have been able to crunch the entire game onto one single floppy.

To be quite honest, I am quite willing to accept a (slight) decrease in the technical qualities of a game if the gameplay is good. Look at *Ultima IV*, for example. The graphics and sound are absolutely irrelevant when compared to the playability and depth of this classic. Similarly, Psygnosis' *Spellbound* might well become a classic platform game on the Amiga. It certainly has the right mixture of addictiveness and gameplay. ❑

Adventurer's Realm

by Michael Spiteri

Welcome adventurers to yet another year of the Realm -Australia's only specialised column dedicated to adventurers, role-players, and wargamers on all Commodore computers. Send in your adventure problems, and if I cannot help you,I'll print the problems among these pages. Most problems are normally resolved within months. There are generalised hintsheets available at no cost at all. Then there are the Realm's Clever Contacts, who are more than willing to help you out. Finally, if you don't mind dishing out a few bucks, you could buy The Official Adventurers Realm Hint Book, which contains help for over forty of the most popular adventure games.

Where to write:
for all adventure games, hints sheets, and general chit chat, write to:
Adventurers Realm P.O.Box 351 Pakenham Vic 3810
For all role playing games (no hint sheets!), write to: Kamikaze Andy in his dungeon:
Realm's Dungeon P.O.Box 315 Maddington WA 6109
** NOTE: Whenever you write to the Realm, whether it be for help or for hint sheets - you must enclose a stamped addressed envelope! ! ! **No sae - no reply!***

Help, help and more help (or the Smart Adventurer's Department)

Thanks to those who have responded to pleas for help. You efforts are bound to cure many sleepless nights.
Richard McNair offers the following help....
Game: Temple Curse
For: Craig Power
Help: You cannot get the branch but you can remove the leaves. Get stick, south, break latch, climb stairs, get rock, breakpadlock, open door and go door.
Game: Temple Curse
For: Scott Robinson
Help: Simply obtain the translator to read the sign.
Game: Island of Spies
For: Craig Power
Help: Type: remove parachute and crawl out
Game: Island of Spies
For: Anthony Jones
Help: Obtain the branch and drop it at the crevice, then travel south
Andrew Corbin and **Stuart George** offer the following clue....
Game: Zak McKracken
For: David Marjanovic
Help: The lighter is situated in the plane, under the front passenger seat cushion. To get past the stewardess, Zak must first go to the bathroom, pick up the toilet paper and put it into the sink. Turn on the tap so that the sink overflows. Ring the bell and run up and put the egg in the microwave and turn it on. This should give you enough free time to get the lighter.
Ian Myers offers the following hint.....
Game: Deja Vu II
For: Darren Bourke
Help: The strange key from the telephone unlocks a slot machine in the hidden gambling room of Joey Siegel's bar. Use the pocket knife and the torch in the detectives apartment to open the back door, and to see inside the bar. Operate the clean wine bottle in the

rack to open the hidden door. Take Sugar Shack's address to the cabdriver. Then open Sugar's front door with the knife. Search her room. Take the note hidden in the vacuum cleaner (the knife is needed). Wear the policeman's uniform to enter the morgue.

Stuart George comes forth with many tips.....

Game: Pool of Radiance
For: Eddy Cheung
Help: Say to skeleton - SHESTNI. Say to spectres - LUX. Say to skeletons - SAMOSUD after seeing the spectre in the church.

Game: Curse of the Azure Bonds
Help: To kill Tyranthraxus (again), acting in haste could enhance your performance. When you meet him, retreat to the doorway and shoot him with that bow from the graveyard.

Game: Secret of the Silverblades
Help: Don't trust the mayor or the black thing, they are both dangerous. Change your money for gems so that you can use the well of knowledge.

Finally, **Kamikaze Andy** donates the following hints....

Game: Leisure Suit Larry III
For: Turrican
Help: You do need the soap in the shower. Give Cherri Tart something more thoughtful, like a land deed.

Game: Leisure Suit Larry II
For: Adrian Smythe. -
Help: On the cruise ship, you must explore around. Get as many things as you can, then find a way off the ship (lifeboat, maybe?)

Game: Arthur
For: Shawn Milligan
Help: To challenge King Lot, use the gauntlet. Use the built in hint feature for the answers to your other questions.

Game: Future Wars
For: Peter Rickard
Help: To use the photocopier, you must insert the sheet of paper into the opening. Press the green button, then the redone. Some documents will then come out. Grab them and go to the teleporter.

Problems, Problems & More Problems

Realm of Darkness (Good name, eh?) is the name of the game,the mirror is the problem. Any takers?

Paul Dickinson, of Tenterfield in NSW is not having too much luck in *Battletech*. What he requires is a certain white code, and he needs it badly - he's been struggling for two months!

M. Schultz of Penrith in NSW is stuck neck deep in problems in *Mordon's Quest*. He wants to know how to get past the second vegie monster, as well as how to get into the crack, and pass the waterfall, and also enter the locked wing in the mansion.

In *Imagination*, how do you use the mole?

Then we have **Andrew Corbin** of Bowral in NSW. Zak McKracken is the game, and he wants to know what you have to draw to get anywhere on the sphinxe's leg and also in the temple in Mexico. Also where do you get the bottle of whiskey and the scroll.

Richard McNair of Illawong in NSW is stuck in many games.

First up, how does he leave the desert in *African Safari*. Then how does he enter the dungeon in *Drak*. Next, in *Jack the Ripper*, how do you leave the house. In the *Temple Curse*, how do you get the ring embedded in flint. Then in the *Last Planet*, how do you stop the greenman from killing you and how do you pass the force field. Finally (phew!), in *Island of Spies*, what is the boat for and how do you start the truck?

The Last Ninja is troubling **Peter Hand**, of North Rocks in NSW. Getting past the swamp in Level 3 is causing him great worries!

Mollie Dorsman would love any general hints for the classic *Crimson Crown*. Could someone help her out?

Richard Vaughan is really stuck in *Shadowgate*. He writes..."To give others an idea where I am, I have the silver orb, golden spike, and wand with serpent. I need to know where to go from there and especially in the Vault (with the stone skull), the door in the well room, the hobgoblins, and the top left door in the Banquet Hall."

Ian Myers is making good progress in *Deja Vu II*, however he would like to know where to use the safety deposit key and the Mercedes key.

Then in *Legend of the Sword*, where is the location of the candle which is needed to escape from the troll's cell.

Realm's Chit Chat

David C Weston of Mullaloo recently heard rumours of a *Universal Military Simulator II* being available.

Well, apparently it was released in the U.K. quite a few months back. I'm sure Questor should be making it available in Australia. Does anyone else know about *UMS II*?

Michael Walsh of Horsham wonders if he has discovered a possible bug in an old Scott Adams adventure. He writes.."A few months back you reviewed a compilation of 12 adventure games by Scott Adams, distributed by Pactronics. When I bought these games, I found that Adventure 10: *Savage Island Pt 1* was faulty. When the LOOK command is entered the program always responds with 'I see nothing special' - no location description, no objects and no exits. I have returned the game to Pactronics. The first time they claimed to have fixed the problem, but nothing had changed. The second time they said they replaced it - the disk had changed but the problem hadn't. "Has anybody experienced this problem with *Savage Island Pt I*? It sounds like to me a definite bug, but I don't like your chances of getting it fixed, as the game is very old.

Ian Myers of Charnwood in ACT wants to know how to create a DATA DISK for use in *Deja Vu II*, as his initialised disk doesn't seem to work.

Feedback from many Realmers is that the game *Champions of Krynn* is absolutely fantastic. **Stuart George** of Springvale in Victoria reckons it is a must-buy, especially if you like the books! Also, Stuart sent in a clipping about the latest Magnetic Scrolls game *Wonderland*. The game allows the player to customise the display. The game also draws maps, and uses windows and pull down menus to the extreme. Keep your eyes open for it - as it will be quite revolutionary!

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The Dungeon by Kamikaze Andy

Legend Of Faerghail

Elves on the rampage! Undead on the loose! Yep, it's the dawn of a new day in the land of Thyn. Besieged by all forms of evil creatures, the Count of Thyn has called you, brave adventurer, to journey out and get help from neighbouring states. Gather together a band of fighters, paladins, and mages in the local tavern, then it's off to the wilderness!

Such is the plot behind *Legend of Faerghail*, a new role-playing game from German software house ReLine. This game is HUGE, with over eight four-level dungeons, and each dungeon having nearly 1000 rooms! With that much room to explore, the designers have included a list of monsters that would impress a zookeeper!

But is it a case of "bigger means better"? If you happen to enjoy lots of combat and lots of exploring, then perhaps this game is for you. However, though *Faerghail* is certainly impressive in size (it comes on three disks), I somehow feel that there is a lack of actual puzzle solving. All the extra rooms do not actually contribute to the story, but merely provide more combat encounters (the value of which is debatable).

Perhaps that lost effort for the puzzles materializes in the graphics, because *Faerghail* has some of the best graphics ever in a role-playing game. The shades of colour used in the forests are amazing, and some of the spot effects (like lightning) are breathtaking. Much like *Bard's Tale*, encounters with other creatures will bring up an exquisitely detailed (though not animated) picture.

Sound effects are also excellent. The digitized clanging of doors, noises in the wilderness, and creaks in the castle enhance the atmosphere of the game no end. There is no music in *Faerghail*, except for the title tune.

I was also impressed with a few other factors in *Faerghail*, including a rather comprehensive list of magic spells (though it takes ages to find and learn them all), and a new innovation in character classes: the blacksmith (whose job it is to fix all the damaged armour and weapons of the party, as well as cast a few spells).

The designers of *Faerghail* aimed at the *Bard's Tale* and *Phantasie* market, because *Faerghail's* interface has aspects of both games. The use of a viewed 3D system, with graphics via a window on the top left of the screen and your party information on the top right, is straight out of *Bard's Tale*. And the combat system, including the graphical representation, is based on the *Phantasie* style of gaming. *Faerghail* even allows you to import characters from *Bard's Tale* or *Phantasie* into the game (A move which comes highly recommended from me. It is nearly impossible to play the game with a newly created group of characters. You'd die instantly! Even when your characters are transferred across, their abilities are scaled down to a level where the party can in fact be killed quite easily. Is this game tough? You bet!).

Legend Of Faerghail comes in a very impressive (and big!) box, along with a rather thick manual, and a poster. The rest of the box is taken up by sponge padding (boo! say the greenies). Which describes this game quite aptly, methinks. Yes, *Faerghail* is a game with "meat" in it, but there are some deficiencies as well. All the extra rooms seem to be nothing more than extra padding.

A game recommended only for the experienced roleplayer (who has a *Bard's Tale* or *Phantasie* character disk ready).

RATINGS:

Graphics:	89%
Sound/Music:	88%
Gameplay:	70%
Value:	75%
Overall:	**79%**

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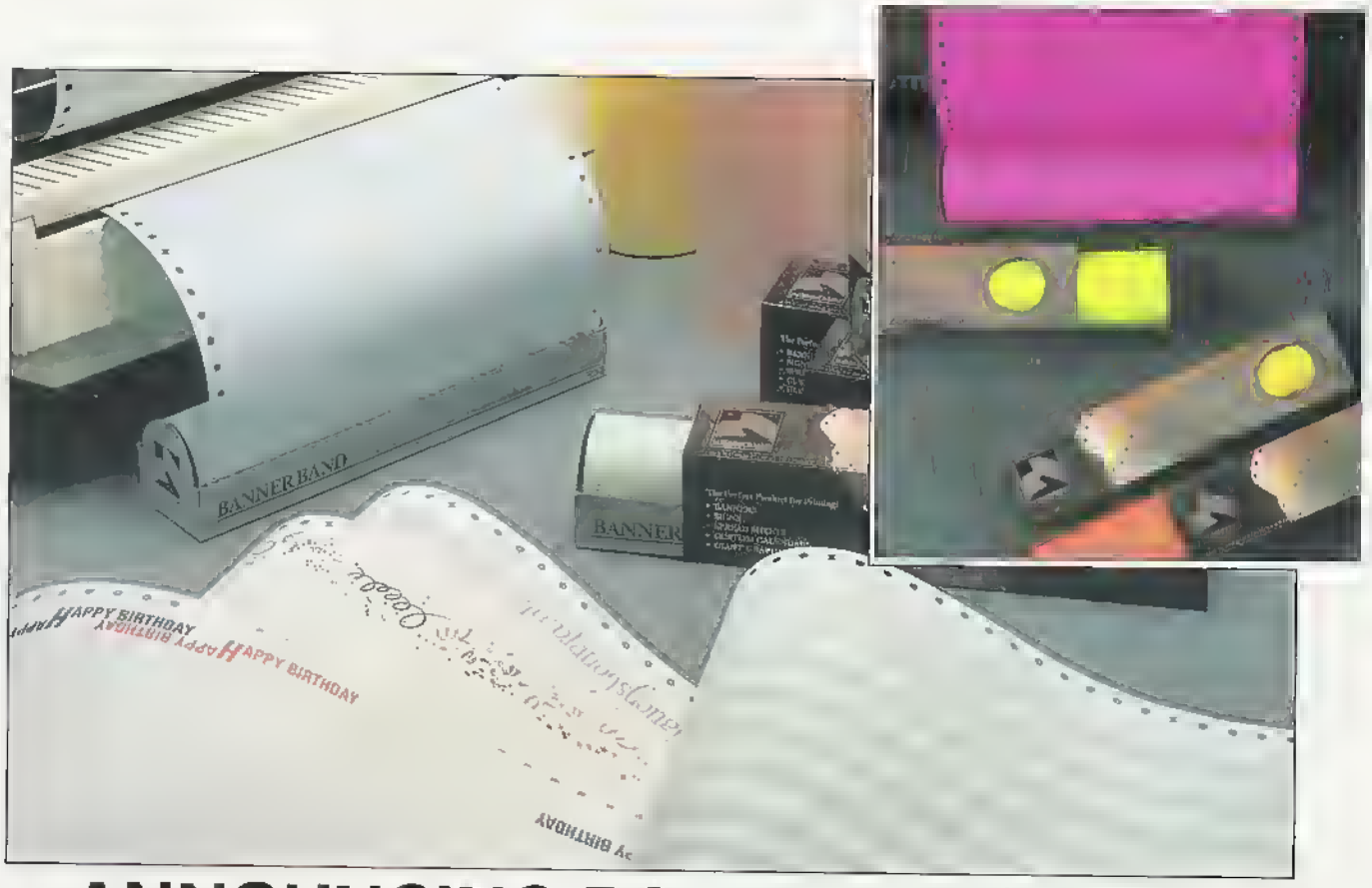

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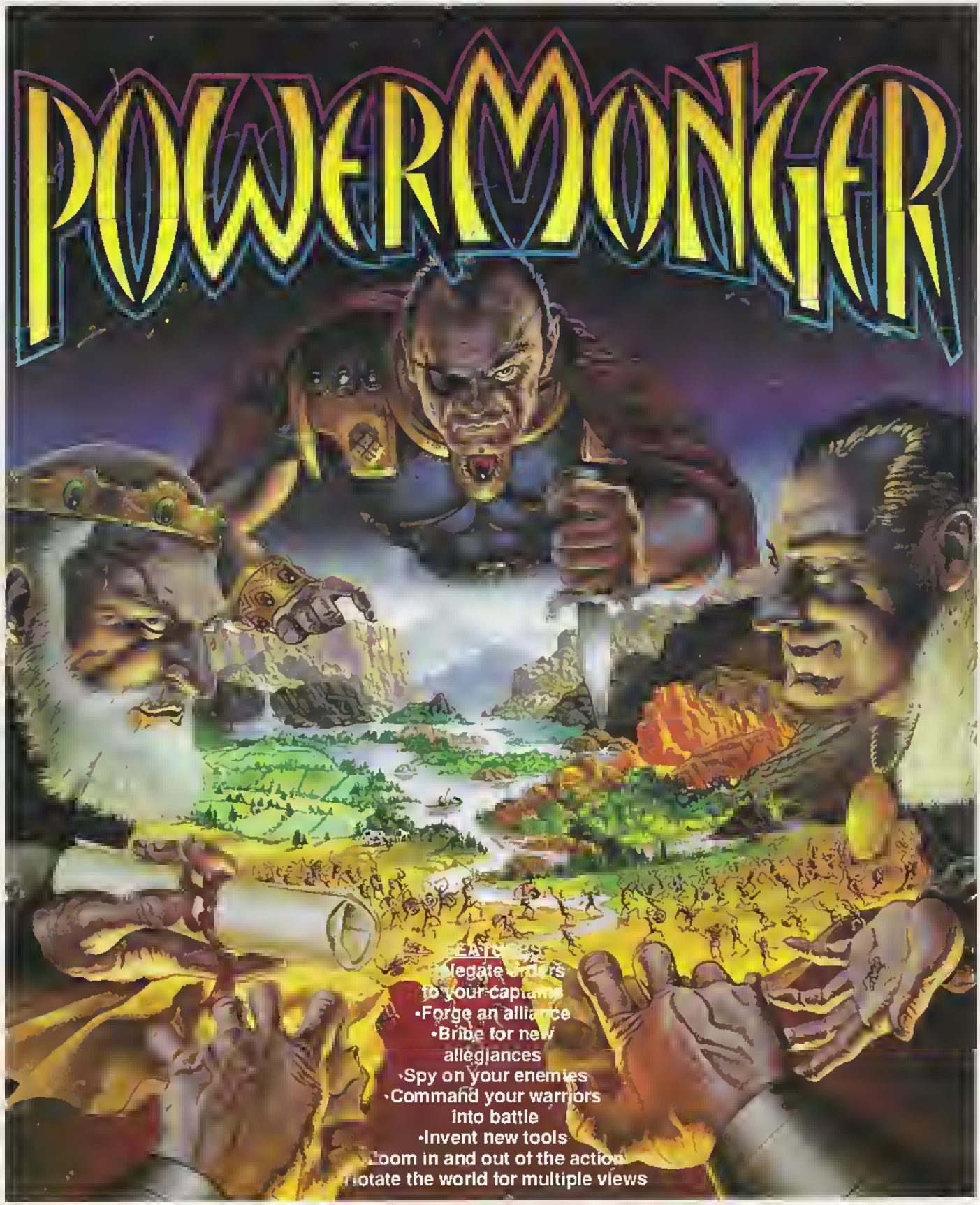

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